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ABSTRACT

The Communication Theory and Methodology section of the proceedings contains the following 18 papers: "The Continuing Question of Motivation in the Knowledge Gap Hypothesis" (Tom Weir); "Memory Decay and the Agenda-Setting Effect: An Examination of Three News Media" (Wayne Wanta and Melissa J. Roy); "Open, Closed, or Both: Expanding the Flexibility of Question Formats in Survey Research" (Paul S. Voakes); "Telling the Truth: Respondent Accuracy in Mass Media Polling" (James Simon and others); "Cultivation Theory Revisited: Another Look at the Theory and Implications for Future Research" (Shinichi Saito); "The Influence of Severity, Vulnerability, and Response Efficacy on Information Seeking and Behavioral Intention" (Kurt Neuwirth and others); "Cultivation and the Influence of Media in Public Opinion Homogenization" (Kimberly Neuendorf and others); "Measuring the Ideological Center in Press Coverage of Election Campaigns" (Tien-tsung Lee and Anthony Y.H. Fung); "The Role of the Self in the Third-Person Effect: A View from Cognitive and Motivational Perspectives" (Li-Ning Huang); "Community Newspapers, Community Pluralism and the Local Impact of Non-Local Groups" (Douglas Blanks Hindman); "Redefining 'Know Nothings'" (Dixie Evatt); "A Spatial Model of Ideology and Political Communication: Voter Perceptions of News Reporting" (James W. Endersby and Ekaterina V. Ognianova); "Family Communication Patterns and Family Functioning: A New Look at an Old Construct" (Joan L. Conners and Lewis R. Horner); "Agenda Setting Reconsidered: The Process at Work in Music Radio" (Joseph E. Burns); "Call-In Media Exposure and Strength of Candidate Preference: An Analysis of the 1992 NES Pre-/Post-Election Survey" (Erik P. Bucy); "Schematic Frames and Reader Learning: The Effect of Headlines" (Glen L. Bleske); "The Influence of Presidential Agenda-Setting on the Mass Media's Coverage of the 'Information Superhighway'" (Lisa A. Beinhoff); and "Reconsidering the Theoretical Linkage between Risk Communication and Relative Personal Invulnerability: A Path Analysis" (Yu-Wei Hu). (RS)

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THE CONTINUING QUESTION OF MOTIVATION IN THE KNOWLEDGE GAP HYPOTHESIS

Submitted for consideration to
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THE CONTINUING QUESTION OF MOTIVATION IN THE KNOWLEDGE GAP HYPOTHESIS

ABSTRACT:

Research into the knowledge gap hypothesis has faced the difficult problem of identifying the motivation of subjects to seek information. This paper suggests that, similar to Maslow's Hierarchy of Needs, there is a Hierarchy of Information-Seeking behavior that determines how an individual is motivated to seek and retain information. Where an individual sits in this hierarchy determines how much effort will be put into a search for information and which information will be sought.

THE CONTINUING QUESTION OF MOTIVATION IN THE KNOWLEDGE GAP HYPOTHESIS

BACKGROUND

For almost 25 years, since the original publication of the Knowledge Gap Hypothesis (Tichenor, Donohoe & Olien, 1970) media researchers have been busily attempting to demonstrate the validity of its principle assertion: that as information is injected into a social system it will be absorbed and learned to a greater degree, and more quickly, by members of higher socioeconomic groups than by members of lower ones. A great many studies have been conducted and some have found conflicting results regarding the knowledge gained from various sources and the factors that seem to impact that gain (Gaziano, 1983). Because of the public policy implications of the Knowledge Gap hypothesis and the concern that power within society is enjoyed by those with greater access to information, the overall study of how different groups access and gain from mass media information is considered to be of considerable importance.

This article attempts to summarize the literature dealing with motivation as a factor in knowledge gap studies and proposes another explanation as to why such gaps might occur: That an individual's information-seeking behavior is primarily influenced by factors that have not been addressed in previous studies.

Knowledge Gap studies have tended to concentrate on a limited number of variables that impact the gain in knowledge within a social system. Most of these have had to do with the characteristics of the receivers of the information, such as education (as an indicator of socioeconomic status), age, interest, motivation and perceived threat from the subject of the information.

In the original work by Tichenor, Donohoe and Olien (1970), the representation of socioeconomic status was measured by years of formal education. In subsequent studies researchers have begun to explore other intervening variables as possible contributors not only to SES, but to knowledge gain and retention, the primary dependent variable under study.

In the original study, Tichenor et al. set up education as the sole indicator of socioeconomic status, based on the presumption that education availed individuals of the skills necessary to glean knowledge from media messages. They and others have attempted to demonstrate the hypothesis using education in the same manner (Griffin, 1990; Tichenor, Olien & Donohue, 1987; Moore, 1987).

Tichenor, Olien and Donohue (1987) attempted to add support to their original theory with a study of the impact of metro daily newspapers on the knowledge gap in surrounding small towns that were served by their own smaller dailies or weekly newspapers. Unfortunately, in this case education (as a measure of socioeconomic status) was not related to knowledge gain by users of the metro dailies though it did prove to be related to the use of the larger papers. Readers of the metro dailies, in turn, demonstrated higher levels of knowledge about the issues in question. In this work Tichenor et al. restated their supposition that " the more highly educated person has greater communication skills, greater background knowledge of the issues, and a structurally trained capacity to interpret information on any public issue in terms of her or his group interests." (p. 133) Again, this has been the additional justification for use of formal education as an independent variable in knowledge gap studies.

In a study of political campaign information, Moore (1987) found that two different issues produced two different findings. The more complicated issue generated an increasing knowledge gap while the less complicated one did not. The author suggests that there may be an "optimum" length of time for political campaigns because lower status voters seemed to catch up in knowledge gain with higher status voters regarding the more complex issue. This brings the question of "ceiling effects" into the equation. Although it will not be addressed at length here, the implication is that higher status people may absorb all the required information earlier in the process and those of lower status will learn more slowly but will catch up if given enough time. The Moore study and another by Griffin begin with an assumption that education is a sufficient measurement of socioeconomic standing but fails to take into account other factors that could influence the accumulation of knowledge within the study, such as actual exposure to media messages, motivation or perceived relevance of the issue.

Griffin (1990) found an initial knowledge gap, but that it diminished over time along with decreasing media attention to the issue. One somewhat confusing finding in this study was that people who were less well-off, older and living in older homes (the sorts of people who might gain the most from information regarding energy consumption) experienced an additional information deficit during the middle years of the study. This leads to the unanswered question of why people who should be most motivated to gain information failed to do so. Griffin suggests that "many of the less educated did not recognize the pertinence of the energy issue information" but this seems an incomplete explanation. What factors are at work that are preventing subjects from understanding the pertinence of the issues? If the lower SES subjects are paying utility bills just like higher socioeconomic participants (with a larger percentage of their disposable income), shouldn't this fact make the issue more pertinent to these subjects and more quickly understood in terms of its importance in their lives? There are clearly additional factors at work here that might explain the findings.

INTEREST AS AN INDEPENDENT VARIABLE

The continuing study of the Knowledge Gap Hypothesis is concentrating on different variables as predictors of differential information gain between societal groups. Whereas education was originally posited as the primary indicator of socioeconomic standing, subsequent studies have looked at a more complex system of interconnected variables that may affect how knowledge is absorbed from the media. Researchers have attempted to demonstrate that there may be other, more accurate measures of socioeconomic status and that there might be other considerations that are more directly related to any increase or decrease in the gap of knowledge gained from the media. Two of the most commonly addressed variables studied as predictors of knowledge gain are the relative interest a subject has in an issue and the relative motivation a subject has to seek information about it. These may seem to be closely related, perhaps inseparable, concepts. In fact, the research has tended to conceptualize and treat them as two basically distinct abstractions.

Genova and Greenberg (1979) argue that self-interest (indicated by respondents' declaration of an issue's importance to them) and social-interest (indicated by respondents' indication that they had discussed events with others) are better determinants of knowledge gain than education, thus expanding the original theory from its premise that socioeconomic status is the primary independent variable, as measured by education. The authors note that "although education is likely to widen an individual's overall scope of interest, it is not necessary and perhaps not reasonable to assume that there are homogenous interests among similarly educated citizens, whether high or low in education." (P. 80). Their study assessed subject knowledge of two widely reported news events (the National Football League strike and the Nixon impeachment developments) and found that "interest is contributing to knowledge gaps, and the resulting unequal distribution of knowledge is then adding to further specialization in public affairs expertise." (p. 90).

Chew and Palmer (1994) demonstrate that, in the long run, interest rather than education is a stronger predictor of knowledge gained and continue the search for more accurate measures of these complex variables. In their study, although a knowledge gap was demonstrated to exist between people of higher and lower interest in the topic, the gap remained constant and significant at each point in time. This study dealt with knowledge of nutrition and refers to three different dimensions of the interest variable: cognitive, affective and behavioral. The authors noted that higher educated persons tended toward a greater knowledge increase, but they did not retain the knowledge gained as well as did lower educated subjects. The studies of knowledge gap that refer to variables such as interest, however, fail to take the extra step to describe exactly why some subjects are more interested than others.

Methodological approaches have evolved to more accurately measure the construct of a subject's interest in a knowledge issue. Lemert (1993) made use of a 5-point intensity scale to measure interest in a study of knowledge gained from Presidential debates. His subjects were asked to rate their interest on a scale ranging from "very uninterested" to "very interested." He also measured age, income, reported interpersonal discussion of the campaign, television viewing and newspaper readership and found that each of these variables significantly predicted knowledge discrepancies in at least one of the three post-debate samples. Education, interest and attention to the media increased in power as predictors of knowledge after the debates began. In short, all of the variables studied accounted for strong predictive powers of knowledge gain in the study. So, what does this tell us? Again it seems that we can argue that such factors as interest and income are significant predictors of knowledge gain, but little is attempted in the way of explanation as to exactly why this is the case.

MOTIVATION AS AN INDEPENDENT VARIABLE

Several published studies have extended the knowledge gap research into the area of a subject's motivation to seek information regarding a particular issue, which is treated separately from interest.

It is logical to begin this discussion with the Ettema and Kline (1977) study that forwards a different explanation of the issue of motivation and interest originally proposed by Cole and Bruner (1971). Ettema and Kline correctly state that much of the previous literature tends to focus on a deficit perspective of a subject's ability or willingness to gain information. That perspective assumes groups comprised largely of minorities approach information gathering with less ability or willingness than the majority groups in society. The authors subscribe to a "difference perspective" in which "persons from different social strata and/or cultures manifest their abilities in different circumstances ...." (p. 187) The difference here is critical in that it changes the focus of the argument from a subject's *ability* to a subject's *motivation* to seek out new information and thereby reduce any existing

11

knowledge gap regarding a particular issue. In effect, the proposal shifts the attention from general cognitive capacity to the skills and motivation to learn. They held that "gaps between higher and lower SES persons widen because lower SES persons are not motivated to acquire information from the particular knowledge domain ... under study." (p. 190).

In keeping with this perspective, Adoni and Cohen (1978) demonstrated in a study of learning from economic news on television that the stronger the motivation, the stronger the information seeking behavior of subjects and the better informed they will become. Here the usefulness of economic information was seen as being low among lower education groups, but only modestly related to the income variable. The authors acknowledged that knowledge levels are lowest among women and lower SES groups, but proposed that these knowledge levels were more a factor of motivation than socioeconomic position.

Ettema, Brown and Luepker (1983) tested motivation to seek information on a topic as a factor in their knowledge gap study involving a health information campaign. They considered age and perceived threat as correlates of that motivation, and found that the health campaign virtually eliminated the existing gap between more and less educated segments of the sample. The authors credited motivation as being a significant factor in mediating knowledge gap effects, but acknowledged that age and perceived threat were only modest predictors of knowledge.

In another study dealing with varying interpretations of independent variables in the knowledge gap hypothesis, Lovrich and Pierce (1984) introduced the concept of a "policy-relevant personal motivation" to describe situation-specific interest in particular issues under study. They found that situation-specific factors were more important influences on knowledge levels than the traditional socioeconomic categorizations. In their description, a situation-specific condition would apply only to a particular issue and would not be generalizable to so-called "transituational" conditions, which is posited in most general SES classifications. The authors, in essence, were saying that each situation is different, and that subjects will demonstrate varying degrees of motivation for information-seeking behavior depending on the issue in question. In assessing a subject's motivation to explore the specific issue of water policy, however, they used a fairly simple measure of water use as a measure of interest. The assumption was that the higher one's water use, the greater the interest in the topic and the general motivation to gain information on water policy. It is possible that such an issue is highly complicated and may involve a great many more factors.

In their study of knowledge gap issues in a health communication project, Zandpour and Fellow (1992) noted that motivational factors were strong predictors of knowledge gain, along with gender and age. In their study of alcohol-related information they found that education was linked to less need for information about alcohol. A measure of perceived health risk (interpreted as motivation) was also measured and found to be a significant predictor. It is also possible that age is associated with motivation in this case.

Two other studies failed to demonstrate the significance of motivation in knowledge seeking behavior, although the studies do not negate the potential importance of the idea of motivation. Gandy and Waylly (1985) found that ethnic identification is not sufficient motivation to seek information in their study of knowledge of the Palestinian/Israeli conflict, but this may not have been an ideal measure of motivation in this study. Viswanath, Kahn, Finnegan, Hertog and Potter (1993) note that motivation does not overpower education as a determinant of knowledge, but that the two act in concert to affect the level of knowledge. Here again, the concept of motivation was measured and proposed, but no explanation was offered to explain why one subject should be more motivated than another on anything but a surface level. In their study of knowledge gained from a cancer-related diet information program, the "motivated" group was represented by a self-selected sample that agreed to participate in the study. This does little to explain the factors that might be involved in motivation.

Fredin, Monnett and Kosicki (1994) discuss groups of people they refer to as "status inconsistent," who may be high on one indicator of socioeconomic standing and low on one or more others. They suspect that the knowledge gap found in the study is a *Gap of Disaffection*, which was more related to a general schemata of distrust or dissatisfaction with media coverage of issues rather than any ability to learn from media messages. In their analysis, they found that education alone was not a sufficient measure of a person's position within the socioeconomic structure of society and therefore not a sufficient predictor of the knowledge gap effect. It stands to reason, therefore, that education in this light is also not a sufficient measure of interest or motivation to acquire information and that other explanations need to be found.

Specific research into the information-seeking behavior of individuals has found similar sorts of problems when it comes to the relative motivation to seek information. Donohew and Tipton (1973), in proposing possible models for information-seeking, establish core components in their model that "seem to determine such things as immediate goals, perceived availability of information, time pressure and prior knowledge." (p. 258) These components are projected to influence the information-seeking strategies of the individual more so than personality measures. In their "Process Model", Donohew and Tipton pointed out that in most instances an individual faces "routine challenges to his system's efforts to maintain a steady course." (p. 260) It is these challenges that determine which types information need to be sought-out. But this does not adequately explain how such components as immediate goals and time pressure are constructed within an individual, or how challenges to maintain a steady course fit within the context of an individual's daily information-seeking decisions.

Culbertson and Stempel (1986) found a positive correlation between what they refer to as "focused" newspaper and television use and knowledge of two widely publicized issues in their telephone survey. They further deduce from these findings that newspaper-reliant individuals appear to be more active information seekers than their television-reliant counterparts, and that the newspaper orientation carries a "multimedia orientation associated with active information seeking." (p. 591) But again, these results do not specify how one individual might be more directed to seek certain types of specific information than another. Like most information-seeking research, this study is concerned more with general attributes of people who associate themselves with a particular media.

The role of cognitive dissonance as a motivating factor in information-seeking-behavior has been explored in many studies. Atkin (1973) contributes to this body of literature and extends it by suggesting that "extrinsic uncertainty" plays an important role in information-seeking behavior. This does little, however, to explain where the uncertainty comes from. While, as Atkin notes, "an individual will select a mass media message when his estimate of its reward value exceeds his expectation of expenditures involved in seeking or avoiding it," (p. 232) his design does not address the question of why individuals are so different in their information-seeking behavior.

The literature described here makes it clear that, although researchers have attempted to isolate the factors involved in knowledge gap effects, something fundamental is missing. It can be demonstrated that education alone is neither a sufficient measure of socioeconomic status nor overall knowledge gain under widely divergent circumstances. It can be argued that a person's interest in a particular topic is a better predictor of knowledge gain, or that his or her motivation to gain information is at the core of the issue. But what continues to elude researchers is the explanation of exactly why this is the case. Why is it that some people who researchers deem to be interested or motivated prove not to be, at least in so much as their information-seeking behavior regarding a particular issue is concerned? Perhaps this is because we have overlooked a more fundamental analysis of the nature of information seeking behavior.

MASLOW'S HIERARCHY OF NEEDS

In 1954, the prominent psychologist Abraham H. Maslow proposed a systematic way of looking at what had been, until that time, been a confusing array of analyses of human needs. Debates continue today regarding the theory, but the essential elements of Maslow's vision are widely accepted and have significant implications in the study of the information-seeking behavior of individuals. A brief review of the theory will serve to illustrate the overall concept which we can then translate into a theory of information-seeking behavior.

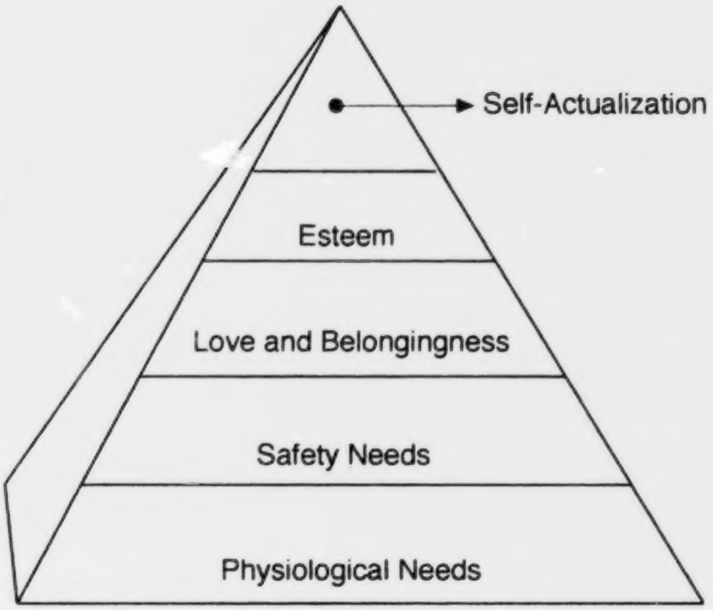
Maslow proposed that the needs of an individual progress through identifiable stages, and that only after the needs of one level are substantially met can he or she begin to focus energy or effort toward the fulfillment of higher needs (Maslow, 1954, 1970, 1987). As he put it, "The most basic consequence of satiation of any need is that this need is submerged and a new and higher need emerges." (p. 33). He notes that as the process unfolds "... (higher) needs emerge and these, rather than physiological hungers, dominate the organism. When these higher needs in turn are satisfied, again new (and still higher) needs emerge, and so on. This is what we mean by saying that the basic human needs are organized into a hierarchy of relative prepotency." (p. 17). A conceptual illustration of Maslow's Hierarchy of Human Needs is found in Figure 1.

The most basic of human needs, according to Maslow's conception, are physiological and consist of the need for food and shelter from the elements. They are the primary and basic requirements of survival of the organism. As Maslow notes, "The physiological needs, along with their partial goals, when chronically gratified cease to exist as active determinants or organizers of behavior. They now exist only in a potential fashion in the sense that they may emerge again to dominate the organism if they are thwarted." (p. 18). The important concept here, particularly as it relates to the structure of information-seeking behavior to be introduced, is that the lower needs do not disappear. They only become displaced in importance by higher needs as long as they are being satisfied.

The second level of needs in Maslow's hierarchy are Safety Needs such as

Maslow's Hierarchy of Needs

Proposes that the needs of an individual progress through identifiable stages, and that only after the needs of one level are sustantially met can he or she begin to focus energy or effort toward the fulfillment of higher needs



Maslow, A.H. (1987) *Motivation and Personality,* Third Edition, Harper & Row

Figure 1
Maslow's Hierarchy of Needs

security, stability, dependency, protection, freedom from fear, etc. As long as these needs remain unsatisfied, the higher needs appear relatively unimportant and are not affectively pursued by the individual. The third level, Love and Belongingness, comes into play only when Safety Needs are satisfied. When Love and Belongingness needs are unsatisfied, according to Maslow, "a person will feel keenly the absence of friends, mate or children." (p. 20). He notes the evidence of dramatic effects upon children of moving too often and the general disorientation of the general overmobility of industrialization to substantiate this section of the hierarchy.

The fourth level, Esteem Needs, are represented by a stable, firmly based and usually high evaluation of the individual by himself and others. Satisfaction of these needs leads to feelings of "self-confidence, worth, strength, capability and adequacy, of being useful and necessary in the world." (p. 21). Finally, the highest level of human needs in Maslow's hierarchy are Self-Actualization Needs. This area refers to the satisfaction and self-satisfaction that comes from a feeling that a person is doing what he or she was meant to do in the world. Even if all other needs are reasonably satisfied, Maslow expects that the Self-Actualization needs will appear to create a dissonance within the individual until these needs are fulfilled by the active pursuit of becoming a more complete person. Again, the important part of this idea is that the Self-Actualization needs may never come fully into play if lower needs are not reasonably satisfied.

As Maslow articulated his theory, he was anxious to note that there are exceptions to the way in which people normally move through the hierarchy, and these are as important to the concept as the individual stages of human need. He noted, for example, that for some people self-esteem seems to be more important than love. Regardless of the reasons for this (and there may be several) the situation does shift the organization of the hierarchy and explains why some individuals pursue needs out of order of what might be expected. Also important is the notion that when a need has been satisfied for a long time, it may be undervalued. As Maslow noted, "people who have never experienced chronic hunger are apt to underestimate its effects and look upon food as a relatively unimportant thing" (p. 26). All of this becomes significant if we look at an individual's information-seeking behavior as if it were ordered by a similar hierarchy.

A PROPOSAL FOR A HIERARCHY OF INDIVIDUAL INFORMATION-SEEKING BEHAVIOR

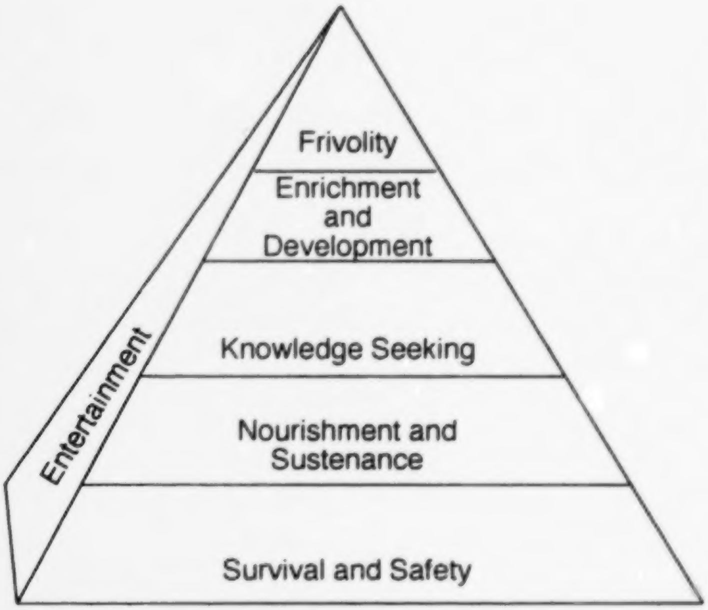
In her authoritative review of knowledge gap literature, Gaziano (1983) noted that there are strong positive relationships between level of education and knowledge. Knowledge gap studies have not, however, explained why this should occur other than to speculate that education provides the skills required to achieve more information, and leads generally to higher socioeconomic status which somehow requires more general and specific types of information.

I am proposing that there is more to the question of motivation in knowledge gap studies than has been explored. Similar to Maslow's theory, it is logical that a person's motivation to seek information about a particular topic is determined by where he or she sits at any particular moment within a *hierarchy of information-seeking behavior*. Figure 2 represents how this hierarchy might work when an individual is faced with the option of paying attention, or not paying attention to a specific piece of information about any particular topic. There are some similarities, and some important differences, between the two hierarchies. Failure to gain knowledge, or to close the gap between the amount of knowledge held by persons of relatively higher and lower socioeconomic status, is determined by whether or not, at the particular time under study, an individual perceives a need to seek or retain information about a particular topic. When lower information needs are substantially satisfied, an individual will actively seek information that is higher on the scale to meet specific higher needs. In other words, researchers in knowledge gap studies error when they assume that one group of persons may be classified as motivated to seek or gain information because they seem, from the researcher's perspective, to need that information.

This proposed hierarchy has as its lower level, the foundation upon which the entire structure is built, a need for Survival and Safety information. This corresponds with Maslow's lower level of Physiological Needs. An

The Hierarchy of Information-Seeking Behavior

A person's information-seking behavior is dictated by their relative place in a Hierarchy of Information Needs. Only after information needs on one level are deemed satisfied can he or she focus effort on securing information from higher levels. Individuals can jump between levels if lower needs are seen as being temporarily satisfied, but will not do so selectively and only for short periods.



Thus, knowledge gaps occur when information is directed a people who find it unimportant based on their relative position in the hierarchy.

Figure 2
The Hierarchy of
Information-Seeking Behavior

individual who finds him or herself at this level will actively seek information that will literally allow them to continue living, or living at an acceptable social level. This person is not likely to be motivated to seek information that would contribute to or elevate their social standing because it simply is not important from their point of view. As an extreme example, the person who lives in continual fear for his or her physical safety is more likely to seek information about security than to actively seek information on the stock market. Even when presented with information that is beyond the immediate need of survival, that falls at a higher level of the hierarchy, such a person cannot be motivated to gain from it. His or her primary energies are going to be directed toward more basic requirements until those needs are substantially satisfied or perceived as being satisfied.

In the Griffin (1990) study on the knowledge gap in energy-related information, it may be assumed that those persons who did not demonstrate a knowledge gain simply found the information beyond their scope of immediate need. It may be true that these persons "did not recognize the pertinence of the energy issue information," but it is unwise to assume that this occurred simply because of their education, or socioeconomic status, or age or any other such simplistic variable. It seems a more complete explanation to recognize that they were not motivated to acquire this information because it was beyond their scope of immediate need.

The second level of the Information Hierarchy is concerned with the motivation to seek knowledge concerning Nourishment and Sustenance. This level has to do with the needs of maintenance, as opposed to survival. The idea is that only after the more basic information needs for survival are substantially fulfilled will an individual actively seek information about how to maintain their well-being past the short term. Nourishment and Sustenance-type knowledge might include information about better foods, more dependable transportation, a better job, or the longer term future of the neighborhood. Still, information that might be classified in the upper levels of the hierarchy will be of little use to individuals who find themselves in this relatively basic setting.

The third level is composed of Knowledge Seeking, and refers to the active seeking of information that will improve the lives of individuals for the slightly longer term. Here is where the issues of investment and elementary self-improvement come into play. Here again, this is not the place for people who are trying to figure out where their next meal is coming from. The Knowledge Seeking level of motivation is where people find themselves when they start thinking about a comfortable retirement, or how to come by a vehicle that will take the family to the Grand Canyon.

The fourth level of the hierarchy deals with issues of Enrichment and Development, and might roughly correspond with Maslow's level of Esteem needs. People on this level seek information to improve themselves beyond just their immediate employment or social situation. They will actively pursue knowledge well beyond their own physical environment as well. Maslow includes in his description of Esteem needs the desire for "strength, achievement, adequacy, mastery, competence, confidence in the face of the world, and independence and freedom." (p. 21) He also recognizes that the level includes a more outward view of things and encompasses a need for reputation or prestige. In the information-seeking hierarchy, these things might be represented by a concern for the community at large, or the world for that matter. In reviewing the literature on previous knowledge gap studies, it appears that many of the topics upon which subjects were supposed to gain information fall within this general category. It should come as no great surprise that many people of lower socioeconomic status would find this type of information beyond their view of what is important in their lives. Similarly, it is not too difficult to imagine that people in higher SES groups would be more likely to learn from such information because it is clearly more closely tied to their position in the hierarchy. Without appearing too callous but still wishing to make the point, there simply wasn't too much demand for self-improvement books during the great depression.

I have referred to the fifth category of information-seeking behavior as Frivolity because it is typified by the active seeking of knowledge that has no real application in the lives of the people who seek it. This is not to say that this information is unimportant. On the contrary, at this level such information is all-important and is much sought-after. The point is that life really is not going to be affected to any substantial degree one way or the other if the knowledge is gained or not. No fortunes are going to be won or lost. No factories will open or close, no communities will spring up or become ghost towns. But to learn a great deal about the ancient civilizations of the world, or to acquire knowledge about the bizarre life of a relatively unknown poet will serve an important need for a person who finds him or herself at the top of the pyramid and does not require such information in daily life. This is the sort of knowledge that is actively sought by those individuals who have substantially satisfied the lower levels of information and feel a need to explore for the sake of exploration. Knowledge gained at this level is gained largely for its own purposes and does not impact in a meaningful way on the daily business of living.

In constructing this hierarchy of information seeking behavior, it was obvious that some parts of it would be significantly different from the strict conception of Maslow's hierarchy of needs. The most obvious of these was how to deal with the issue of information about entertainment and diversion. It is clear that people of all levels in this hierarchy will actively seek information about things that do not specifically satisfy the more fundamental needs. The types of entertainment may vary a great deal, but the general concept of escape applies to everyone. To deal with this, I have added a dimension to the pyramid that allows information-seeking for entertainment and diversion to run through all of the other levels. This provides for persons whose primary knowledge acquisitions are for survival to find out what movies are playing every now and then, or what the television offers on a particular evening. Such diversion may be even more important for these people as a means of escape from the threats imposed by their everyday lives. It also provides for the persons who primarily seek self-enrichment to actively pursue something as unstructured as the demolition derby. Exposure to diversion is important for all levels of the hierarchy and may represent the primary motivation to seek news through the media.

While we are discussing comparisons of the hierarchy of information-seeking behavior and Maslow's hierarchy of needs, it is a good time to point out a few others. Maslow acknowledged that as people move through his hierarchy, they can slip around a bit by noting that even when the lower needs are substantially satisfied they "may emerge again to dominate the organism if they are thwarted." (p. 18) In the same vein it must be noted that the more fundamental information-seeking behaviors may become important again to a person if that person's situation changes dramatically in a real or imagined way. What is important here is the notion that individuals can move from one level to another if, even for a relatively brief time, they are satisfied that the necessary information is in hand. They can also slip backwards in the hierarchy if those lower information requirements are seen as deficient. There are speedy escalators running between most, if not all levels.

Also worthy of note in the two conceptualizations is the assumption that in the information-seeking hierarchy, as in the hierarchy of needs, behavior is goal directed. Individuals are motivated to seek certain types of knowledge to accomplish specific goals just as they are motivated to satisfy basic, and later more lofty, needs. In Maslow's vision the goal may, in fact, be the satisfaction of needs, but this is not true with information-seeking. This behavior is deliberate and purposeful and while in many instances the seeking of information may coincide with the satisfaction of needs, they really are two distinctly separate activities.

SUMMARY

Maslow states as the first presumption of his hierarchy of needs that "the individual is an integrated, organized whole." The implication is, of course, that every activity and thought pattern is somehow related to all others and that all can and will be mustered to meet certain objectives. This is an important concept that relates to the discussion of motivation to acquire information in knowledge gap studies. Whereas it has been difficult for researchers to clarify the variables involved in a systematic study of knowledge gain, it has been even more difficult to avoid the great temptation to believe that there is a relatively simple process going on. What I am proposing here is that the motivation to seek information is complex, and that it is different for each individual depending on where he or she sits in the suggested hierarchy. Not only that, the motivation to seek information can and will be different for each individual at two points in time should their relative position in the hierarchy shift. It is not sufficient for a researcher to assume that information is salient to a subject. Nor is it sufficient to explain why that information is, or should be, important to an individual.

In the study of why some individuals tend to gain knowledge faster and to a greater degree than others in a social system, research must pay attention to the relative motivations as prescribed by those individuals' particular situation in life. Nothing so simple as socioeconomic status will ever be able to systematically predict knowledge gain because it can do nothing to explain why one person's motivation is so much different from another while they both hold the same relative socioeconomic status.

It is hoped that this presentation will take the study of the knowledge gap hypothesis to another level by laying the groundwork for a more complete understanding of the motivation to seek information.

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Memory Decay and the Agenda-Setting Effect: An Examination of Three News Media

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Memory Decay and the Agenda-Setting Effect:
An Examination of Three News Media

Abstract

This study examined how individuals' memory of information about issues covered in three news media decays over time. Local newscasts, national network newscasts and local newspaper coverage showed agenda-setting effects in a relatively short time (four to eight days), but the effect decayed shortly thereafter (14 to 28 days). The results also suggest that the agenda-setting effect is much stronger and memory decay is much more gradual for the local newspaper.

Memory Decay and the Agenda-Setting Effect: An Examination of Three News Media

The mental processing of information obtained through the mass media is complex and elaborate. Individuals attend to, process and retain a wide variety of information in many different ways. At the same time, the mass media provide individuals with an endless stream of issue coverage. Issues covered today replace issues covered yesterday, and individuals somehow must make sense of this coverage.

The end result of this mental processing of issue information is the mass media's agenda-setting effect. Coverage of issues in the mass media gives individuals salience cues by which they judge the perceived importance of these issues.

Of concern here is how the rise and fall of coverage of issues on the mass media agenda is related to the public agenda, given the fact that individuals have a limited ability to retain information. Obviously, individuals do not remember everything they read in the newspaper or everything they view on television, especially as new information becomes available to replace old information. In other words, an individual's memory of information gained from the news media decays over time.

Watt, Mazza and Snyder (1993) took memory decay into consideration in their investigation of the optimal agenda-setting time-lag. Basing their study on the memory decay curve first investigated by Ebbinghaus (1885), Watt et al. reasoned that the effects of exposure to media messages will decay exponentially over time. Today's news will have a stronger effect on individuals than yesterday's news, and much more influence than news covered days earlier. They found that the memory decay time-lags differed for different issues: from 30 days for Iran to 600 days for inflation.

While the agenda-setting effect of various types of issues may decay differently over time, the influence of different media also may differ. For example, the influence of a visual medium, such as television, may decay more rapidly than a verbal medium, such as newspapers. In addition, a national medium, such as a national television newscast, may have a different decay time period than a local medium, such as a local newscast.

Thus, the present study will attempt to answer the following question: Given the fact that an individual's memory of information gained from the mass media decays over time, what is the time period in which agenda-setting effects disappear for three different news media? The three media examined are local newscasts, national network newscasts and a local newspaper. The answer to this question has several important implications.

First, this study addresses an important topic for research in the general area of media effects. Since agenda-setting is "social learning," how individuals learn about society is an important area of research.

Second, this study has important ramifications for agenda-setting research. The results may offer insights into how individuals process and retain information from different media.

Third, finding the memory decay time-lag in agenda-setting is imperative for future researchers. It would give researchers guidelines for plotting future studies, especially for studies in which a specific type of news medium is included. In addition, the time-lag for agenda-setting investigations is taking on greater significance in light of recent attempts to employ complex statistical analyses, such as time-series analyses (Zhu, Watt, Snyder, Yan and Jiang 1993) and path analyses

(Wanta and Hu, 1994). As statistical analyses increase in complexity, the precision needed for measurements of media content is amplified.

Theoretical framework

One of the most important considerations that agenda-setting researchers must address is what time frame they will employ in their analyses. In other words, researchers must decide how far back in time they will go to analyze media content prior to their field work. As Winter and Eyal (1981) note, "Since most of these studies measure and compare the media and public agendas over time, the temporal variable would appear to be crucial."

Time-lag selection is especially important in agenda-setting research, since studies in this area investigate a causal hypothesis. Chaffee (1972) argues that a time-lag that is too short will not capture the causal relationship, but a time-lag that is too long is also a serious problem because "there is always the danger that a causal effect will 'dissipate' over time if the researcher waits too long to measure it."

Salwen (1988) believes the time-lag question is important because researchers need to confine their measures of media coverage to as short a time period as possible because "any time discrepancies in the measurement of the public agenda may affect the public's evaluations of issue salience."

Despite the importance of a precise time frame, many discrepancies remain regarding the optimal time period to include in agenda-setting studies. Studies have examined issues in time frames as short as one week (Mullins, 1977; Becker and McCombs, 1977), and as long as nine months (Sohn, 1978). Funkhouser (1973) compared media coverage across a decade with public concern in the same time period.

Furthermore, even the few studies that have dealt specifically with the time-lag question have produced inconsistent results. Table 1 lists the results of five studies that specifically examined the optimal time-lag in agenda-setting. The optimal time-lags varied from a four-month period stretching from two to six months before the survey period (Stone and McCombs, 1981) to zero to two weeks before the survey period (Eaton, 1989).

The varied results on the optimal agenda-setting time-lag, however, could be due to methodologies employed. Stone and McCombs (1981) examined two news magazines: *Time* and *Newsweek*. Winter and Eyal (1981) studied one issue (civil rights) from 1954-1976 and front-page coverage in the *New York Times*. Salwen (1988) also looked at one issue (the environment) and coverage in the three largest daily newspapers serving Lansing, Michigan. Zucker (1978) investigated four issues across time and coverage on the three national networks. Eaton (1989) examined complete agendas based on bi-weekly data collected from three network broadcasts, four newspapers and three newsmagazines combined.

In addition, most of the research dealing with the time-lag question examined one issue, or a series of single issues, across time. But given the large number of "Type I" studies (McCombs, 1981) -- which examine an entire agenda of issues covered by the news media and an entire agenda of issues perceived as important by members of the public -- an investigation comparing complete media and public agendas is sorely needed. This type of examination allows for an investigation of the inter-relatedness of issues, an important consideration given the recent research that suggests that issues compete with each other in a "zero-sum" game (Zhu, 1992).

Previous research also has noted the possibility of differences between the news media. Several researchers (Tipton, Haney and Basehart, 1975; McClure and Patterson, 1976) have found that newspapers correlate better than television with voter agendas. Shaw and McCombs (1977) argue that television news might have a stronger short-term impact, but newspaper content may have a more consistent effect across longer periods of time. Zucker (1978), on the other hand, argues that at the national level, the public may be more influenced by the three networks' newscasts than by newspapers because of television's accessibility.

A number of researchers also have suggested that national news media, to a large degree, set the agenda of issues covered by local media. Breed (1955), for example, suggests that news flows downward from the elite dailies. In other words, small dailies learn coverage patterns from larger newspapers.

Crouse (1972) similarly argues that the elite media, such as the *New York Times*, influence the national agenda. Front-page coverage in the *New York Times*, he concludes, means prominent coverage in every other paper in America.

Thus, if smaller, more localized media react to the national media, the national media may have a more immediate effect on the public. In other words, if local media follow national media coverage, issues in the local press will take longer to reach the general public than ones in the national or regional media -- and consequently, will take longer to influence the public agenda. However, since the national media may first influence local media and then the public, the national media may show a slower decay in effect over time.

In addition, national media also devote more coverage to international and national issues than do local media. Indeed, the traditional agenda-setting question, which was employed here, asks respondents "What is the number one problem facing our country today?" Given that this question addresses a national agenda, national media should have a stronger agenda-setting effect than local media, which must devote significant coverage to issues of only local concern. As a result, individuals may demonstrate a slower memory decay for national issues covered by the national media.

Added to the mix of factors surrounding the time-lag question is the role of memory decay. Individuals do not remember equally as well media content across several days. Thus, the time period when agenda-setting effects disappear is as important to researchers as a precise optimal time-lag. In other words, at what point do individuals fail to recall the issue information transmitted by the news media and accumulated in media consumers' memories?

The study of memory and its decay dates back to before the turn of the century. In a series of experiments conducted by Ebbinghaus (1885), lists of words were learned and relearned on successive days. The amounts of time necessary for successful learning each day were noted and later compared to each other in order to discuss the relationship between information retention and time. From the resulting graph, Ebbinghaus -- and subsequent researchers who further upheld his findings -- concluded that the "main characteristic (of human memory decay) is a rapid fall immediately after learning and a gradual flattening out as the interval is prolonged. Forgetting becomes more and more gradual as time advances (Woodworth and Schlosberg, 1954, p. 726)." Further, when Ebbinghaus plotted his data against the logarithm of time, he observed that "retention declines approximately in proportion to the log of time (Woodworth and Schlosberg, 1954, p. 726)."

Watt, Mazza and Snyder (1993) use this exponential expression of memory decay over time when analyzing three issues presented in television newscasts and their agenda-setting effects. In order to account for past coverage of an issue in addition to current stories, Watt et al. modified the Ebbinghaus curve. The resulting formula analyzes memory decay of all issue coverage and its effect on audience issue salience, while also accounting for issue prominence (i.e., where it was placed within the newscasts) and issue obtrusiveness (i.e., personal experience with an issue by audience members).

In addition to altering the Ebbinghaus curve, Watt et al. use the concept of a "time window" to account for past, accumulated coverage and current news stories about an issue. These time windows, or data sampling periods of variable length, are used to determine "how long ... people continue to be affected by past stories in the media (Watt et al., 1993, p. 409)." As with Ebbinghaus' memory loss hypothesis, all issue coverage and salience within the time window should proportionately decay. Given the mathematical fact that an exponential decay never reaches zero, Watt et al. assume an eventual memory loss of 95 percent as the maximum loss of story impact in each time window. Their results show that different issues show their strongest agenda-setting correlations when analyzed within different time windows. Their memory decay time windows ranged from 12-60 days for Iran to 600 days for inflation.

Our study builds upon the groundwork laid by Watt et al. (1993). Instead of examining individual issues in time windows of up to two years, however, the present study investigates three different news media for shorter time frames. Logically, a news report should not have an influence on individuals 600 days later -- as found by Watt et al. Our study examines daily coverage for six months for two news media and for 50 days for a third.

Method

A telephone survey was conducted in a U.S. city in February 1994. The area surveyed has a population of approximately 200,000 and is home to a large state university. Interviewers were students at this university. The response rate was 60 percent.

The public agenda was determined by responses to the traditional agenda-setting question: "What is the number one problem facing our country today?" The 12 issues that were mentioned most often by respondents were included in the study. The percentage of respondents who mentioned each issue as being the most important problem determined where the issues ranked on the public agenda. The issues and the percentage of respondents naming them as the number one problem facing our country are listed in Tablè 2.

Coverage of the 12 issues were then examined in three news media: the national broadcasts of ABC World News Tonight, the local broadcasts of the evening news for the station with the highest ratings in the area surveyed, and a local morning daily newspaper serving the area. The ABC broadcasts were coded through the Vanderbilt Television News Abstracts for the six months preceding the first day of our survey. In a few cases, always on either a Saturday or Sunday, ABC did not have a national broadcast. To maintain consistent time intervals, a broadcast of either CBS or NBC was coded on these days. The local television broadcasts were coded through station logs for the 50 days preceding the first day of the survey. Only 50 days of logs were available for this study. Finally, the front pages of the main news section were coded for the local daily newspaper for the six months preceding the first day of our survey. Intercoder reliability using Scott's pi averaged .89.

Each news story was weighted according to the distance in time from the date of broadcast to the start of the survey period. The weights were determined by the memory decay curve proposed by Ebbinghaus (1885). (For a more detailed description of the memory curve developed by Ebbinghaus, see Woodworth and Schlosberg, 1954).

The weights are based on two main assumptions:

1. Individuals eventually retain only about five percent of all knowledge that they learn. In other words, 95 percent of an individual's memory decays.

2. Memory decay is not linear. That is, memory decays rapidly at first, then slows.

The effects of the accumulated weighted coverage were then examined for each day of the study. For example, for Day 1, the day before the beginning of the survey period, the coverage of issues televised on that day was weighted by .05, again, under the assumption that memory decays 95 percent. For Day 2, the coverage of the day before the survey was weighted by .10 and coverage of two days before the survey was weighted by .05. These weighted scores were then summed. For Day 3, weights ranged from .12 to .08 to .05. Each subsequent day was weighted similarly, so that coverage the farthest from the survey period was weighted by .05 and the other dates were weighted based on the Ebbinghaus curve. Thus, the coverage closest to our survey period received a heavier weight than coverage farther back in time. Indeed, if Ebbinghaus' memory decay curve is correct, information gained recently should be recalled more efficiently than older information and thus should have a stronger agenda-setting effect on individuals.

Spearman rank-order correlations were then computed examining the relationships between the accumulated weighted coverage of the 12 issues for each day in our analysis and the public agenda. In other words, in the case of ABC newscasts, Spearman rhos examined the agenda-setting effect on the public for time-lags ranging from one day before our survey period to 180 days before our survey period. If agenda-setting effects are most pronounced after one day of coverage, for example, the Spearman rho for one day of coverage and the public agenda will be the largest in the study.

The Spearman rhos also will suggest where the public's memory decay occurs. If the Spearman rhos are no longer statistically significant after 30 days, for example, the results will suggest that the public's memory of issue information decays after 30 days.

Methodological strengths and weaknesses

Several methodological aspects are important here.

First, the methodology here employs an entire agenda of issues. This was the presupposition underscoring the original agenda-setting hypothesis -- that an "agenda" of issues in the news media would influence an "agenda" of issues that the public perceives as important. Thus, this analysis returns to the area proposed in the original agenda-setting hypothesis.

Second, the analysis allows for the examination of several news media. Logically, information from different media will be processed differently among individuals. The passive processing of visual information from television should produce results that are different from the active processing of verbal information from newspapers. Local information also should be processed differently than national information.

Third, the analysis allows for the examination of several memory decay time lags. In other words, our analysis allows us to pinpoint to the day when the agenda-setting effect eventually decays in our study -- from one day to 180 days.

The major shortcoming of this study is that the analysis, by design, uses aggregate data -- that is, data from an entire "public" rather than from individuals. Thus, the memory decay examined here is not an individual's decay, but rather a decay from an entire population of individuals. Indeed, mental processes take place within individuals, not within a mass of individuals. However, agenda-setting is a societal effect (see Lowery and DeFleur, 1988). Thus, memory decay, while taking place within individuals, should be apparent in an analysis of a population of individuals in which this process is occurring.

Results

Spearman rank-order correlation coefficients for the three news media in our study are listed in Tables 3 to 6 and are plotted in Figures 1 to 4.

As Figure 1 and Table 3 detail, the ABC news broadcasts did not produce any statistically significant Spearman rhos for the 12 issues in our study. In other words, ABC news apparently did not have an agenda-setting effect on the respondents in our study. This was contrary to what we initially believed. We originally thought that national media would best match the public agenda because the agenda-setting question asks what the respondent believes is the most important problem facing "our country" today. The local media's concentration on local issues, we thought, would lessen their agenda-setting effect.

A secondary analysis of our data revealed that one issue -- international problems -- received an extensive amount of coverage, but ranked low on the public agenda (a tie for tenth). Indeed, the nature of national network news implies that the networks provide extensive coverage of news around the world, which apparently did not catch the attention of respondents in our study.

Despite the quandary caused by the issue of international problems, several trends are apparent. As Figure 1 and Table 3 show, the Spearman rank-order correlations for the national news broadcasts of ABC reached one of their highest levels at Day 4 and Day 5 ($r = .32$), before decreasing. Besides the first few days of the study, the lowest rho occurred after 14 days. The rhos showed a large increase again at Day 38 ($r = .36$) and reached their peak at Day 62 ($r = .39$). They remained at the $r = .39$ level until Day 92, when they dropped to $r = .36$ and remained at this point until the end of the study (Day 180).

To further examine the network television news-public relationship and to guard against the results of our study being suppressed because of coverage patterns for this one issue, we re-analyzed the data after dropping international problems from the analysis. The results of the 11 remaining issues mirrored the results of the original 12, except for the fact that statistically significant findings resulted at several points.

As Figure 2 and Table 4 show, the Spearman rhos reached statistical significance after only four days ($r = .63$), and dropped below the $p < .05$ level of statistical significance after Day 6. The lowest rho was again at Day 14 ($r = .41$). The rhos reached statistical significance again at Day 38 (r = .65) and reached their peak at Day 62 (r = .68), before decreasing slightly at Day 92.

Figure 3 and Table 5 detail the results of the Spearman rhos for local television broadcasts. The rhos show several differences from the rhos for national news. Here, the Spearman rhos reached statistical significance at Day 3 (r = .63) and peaked at Day 6 and Day 7 (r = .67). The rhos then decreased slightly, dropping below the level of statistical significance at Day 11. The rhos again reached statistical significance from Day 15 to Day 17 and again at Day 20. All of the other rhos were not statistically significant at the p < .05 level. In addition, the rhos were unchanged from Day 42 through the end of our study period at Day 50 (r = .51).

The Spearman rhos again were different for the local newspaper. As Figure 4 and Table 6 show, the rhos reached statistical significance at Day 8 (r = .62). The rhos reached significance at the p < .01 level at Day 10 (r = .71), and peaked at both Day 15 and Day 18 (r = .81). The rhos dropped back to the p < .05 level at Day 28 (r = .67), before leveling off at Day 34 through Day 59 (.61). The rhos were no longer statistically significant at Day 84 (r = .54). The rhos were unchanged from Day 88 through the end of our study (r = .51).

Discussion

The purpose of this study was to examine how the agenda-setting effect dissipates over time as individuals' memory of issue information decays. The findings are summarized in Table 7. The results show how differently memory decay affects the agenda-setting process for the three news media.

A few similarities between the three media did emerge. First, agenda-setting effects were evident early for all three media. Effects appeared after four days for national network news (though only after the issue of international problems was dropped from the analysis), after six days for local news and after eight days for the local newspaper.

Second, the Spearman rank-order correlations showing agenda-setting effects dropped below statistically significant levels relatively quickly for all three news media. The rhos were no longer statistically significant after six days for ABC news and after 11 days for local newscasts. While the rhos for the local newspaper were statistically significant for a much longer time -- until Day 85 -- the rhos did drop below the $p < .01$ level at Day 28. Thus, memory of issue information for local newspapers did decay slightly after four weeks.

All of these results seem logical on the surface. Since individuals' long-term memory is limited, a memory decay of a few weeks after an initial agenda-setting effect of four to eight days appears plausible.

However, the agenda-setting effects, as demonstrated by the Spearman rank-order correlations, showed several differences for the three news media. Especially evident were differences in long-term memory decay between the three news media examined here.

The agenda-setting effect for the local newspaper, for example, first appeared on Day 8 and peaked at Day 15 and Day 18. The agenda-setting effect decayed slightly at Day 28, and did not completely disappear until Day 85. Thus, the optimal time-lag for agenda-setting effects to occur was longer for the local newspaper than for either local or national newscasts. Moreover, the local newspaper produced the strongest Spearman rank-order correlation in the study ($r = .81$), indicating that in our study, newspapers had a more powerful agenda-setting effect than television, as both Tipton, Haney and Basehart (1975) and McClure and Patterson (1976) found.

The agenda-setting effect also decayed much more gradually for the local newspaper, since the agenda-setting effect for both local and national broadcasts decayed only a short time after an early initial effect. This finding supports the argument of Shaw and McCombs (1977) that television news has a stronger short-term impact, but that newspapers have an effect across longer periods of time.

The agenda-setting effect decayed at much different rates for both local and national newscasts. The agenda-setting effect for local news broadcasts disappeared in Day 11, though there was a minor effect for Days 15-17 and 20. The agenda-setting effect disappeared completely by Day 21. For national news, the agenda-setting effect was not evident at all, until the issue of international problems was removed from the study. Then, the agenda-setting effect was evident for Days 4 and 5, but decayed by Day 6. However, the agenda-setting effect re-emerged at Day 38, then remained through the end of our study period, 180 days in all.

Two important points should be made about the results for the national newscasts. First, while an agenda-setting effect occurred early (Day 4 and 5), a consistent agenda-setting effect didn't appear until Day 38, or more than five weeks before the survey period. Thus, the accumulated coverage of five weeks led to the most consistent agenda-setting effect for the ABC newscast. In addition, the optimal time-lag for the strongest agenda-setting effects -- when memory decay was accounted for -- was between 62 and 92 days, or about two to three months before the survey period.

Second, individuals' memory decay for national news broadcasts was very gradual. In fact, our findings suggest that the public's long-term memory decay of issue information went beyond the six months of news coverage examined in the present study.

One other possible explanation about the memory decay time period for the national network news should be noted: Perhaps agenda-setting effects really peaked at between four and five days, and memory of the issues decayed at Day 6. The consistent agenda-setting effect found after Day 38, then, may be due to the fact that coverage patterns finally stabilized here. Indeed, the media agenda changed little from Day 38 to Day 62 and did not change at all from Day 62 through Day 92 and from Day 92 through Day 180. It seems eminently logical that individuals' abilities to recall news coverage of issues should not last for two to three months. One week seems like a more logical time period for agenda-setting effects to occur, and two weeks seems like a logical time period for the memory of issue information to decay.

The results of local television news coverage, meanwhile, appear more easily decipherable. Here, the optimal time-lag for the strongest agenda-setting effects to occur was six to seven days -- or about one week. The memory decay of issue information followed one week later -- with the Spearman rank-order correlations reaching one of their lowest points on Day 14. (when r = .46). While agenda-setting effects again reached statistical significance on Day 15, none of the Spearman rhos after Day 21 were statistically significant.

Thus, taken as a whole, both local and national television news media and the local newspaper produced agenda-setting effects in a relatively short time before our survey period. The memory of the issue information gained by respondents in our study also decayed in a relatively short time -- much shorter than the Watt et al. (1993) study found.

The long-term memory decay of agenda-setting effects, however, showed a wide discrepancy between the results of the local and national newscasts. This discrepancy, as with the lack of agenda-setting effects found for ABC news, again could be due to the types of coverage patterns of national news. Besides the extensive coverage of international news, national network news also may be more consistent in its coverage of all national issues, while local news covers a wider range of issues. Since network news covers a more consistent agenda of issues, this agenda eventually reaches a point where it stagnates -- where issues no longer go up or down on the agenda. In other words, the differences between issue ranks reaches a stage where only a major event that receives a staggering amount of coverage can more an issue up past another issue. This point of stagnation may have occurred after two to three months of our study.

Local news, on the other hand, may demonstrate more flexibility in its coverage of issues. Thus, the agenda of issues covered on local newscasts may not stagnate as the agenda for national news might.

Overall, it should be noted that the findings here should be tempered. Historical factors obviously could cause time-lag and memory decay differences at any given time. As Stone and McCombs (1981) conclude, "It cannot be assumed that a neat pattern will be established in any single specific week during which the content of the news media will yield the same, or a highly similar, pattern of salient issues corresponding to the public agenda." The optimal time-lags and memory decay time periods found here, then, could be unique to the present study.

Regardless, the results here point to a potential fruitful area for future research. Researchers should examine why agenda-setting effects seem to drop off after a certain amount of time. Apparently, mental processing of the news may be limited by time. As Zucker (1978) concluded, old news may be forgotten. Mental processing of the news obviously is very complex.

Overall, it is hoped that the findings here will offer future agenda-setting researchers a guide to follow when plotting time-lags between survey periods and media coverage. The results demonstrate that memory decay can vary across different media, and these differences should be noted when determining time frames for agenda-setting studies. Greater precision in measuring time-lags and memory decay time periods is imperative for future agenda-setting research.

Table 1. Previous studies examining the optimal time-lag for agenda-setting effects to occur.

Researchers	News media	Optimal time-lag
Eaton (1989)	ABC, NBC, CBS, New York Times, Los Angeles Times, Chicago Tribune, Wall Street Journal, Time, Newsweek, U.S. News & World Reports	zero to two weeks
Stone and McCombs (1981)	Time and Newsweek	four-month period stretching from two to six months before the survey period
Salwen (1988)	Three largest dailies serving Lansing, Mich.	five to seven weeks
Winter and Eyal (1981)	New York Times	four-to-six week period immediately prior to fieldwork
Zucker (1978)	Three national networks	two to six weeks before the survey period

Table 2. Responses to "most important problem" question.

Issue	Percent naming it number one problem
1. Crime	40.5
2. Health care	13.5
3. Economy	12.2
4. Dissatisfaction with government	6.3
5. Social problems	5.4
6. Budget deficit	5.0
7. Poverty/homelessness	4.5
8. Morality	3.6
9. Human rights	2.7
10. (t) International problems	2.3
10. (t) Drug abuse	2.3
12. AIDS	1.8

Table 3. Spearman rank-order correlation coefficients for ABC news

Day		Day		Day		Day	
1	.19	46	.32	91	.39	136	.36
2	.09	47	.32	92	.36	137	.36
3	.14	48	.32	93	.36	138	.36
4	.32	49	.32	94	.36	139	.36
5	.32	50	.35	95	.36	140	.36
6	.30	51	.34	96	.36	141	.36
7	.28	52	.34	97	.36	142	.36
8	.28	53	.34	98	.36	143	.36
9	.22	54	.34	99	.36	144	.36
10	.26	55	.34	100	.36	145	.36
11	.26	56	.34	101	.36	146	.36
12	.26	57	.34	102	.36	147	.36
13	.26	58	.35	103	.36	148	.36
14	.21	59	.37	104	.36	149	.36
15	.21	60	.36	105	.36	150	.36
16	.21	61	.36	106	.36	151	.36
17	.21	62	.39	107	.36	152	.36
18	.21	63	.39	108	.36	153	.36
19	.21	64	.39	109	.36	154	.36
20	.22	65	.39	110	.36	155	.36
21	.22	66	.39	111	.36	156	.36
22	.29	67	.39	112	.36	157	.36
23	.29	68	.39	113	.36	158	.36
24	.29	69	.39	114	.36	159	.36
25	.29	70	.39	115	.36	160	.36
26	.28	71	.39	116	.36	161	.36
27	.30	72	.39	117	.36	162	.36
28	.28	73	.39	118	.36	163	.36
29	.28	74	.39	119	.36	164	.36
30	.26	75	.39	120	.36	165	.36
31	.30	76	.39	121	.36	166	.36
32	.30	77	.39	122	.36	167	.36
33	.29	78	.39	123	.36	168	.36
34	.30	79	.39	124	.36	169	.36
35	.29	80	.39	125	.36	170	.36
36	.31	81	.39	126	.36	171	.36
37	.31	82	.39	127	.36	172	.36
38	.36	83	.39	128	.36	173	.36
39	.34	84	.39	129	.36	174	.36
40	.34	85	.39	130	.36	175	.36
41	.38	86	.39	131	.36	176	.36
42	.38	87	.39	132	.36	177	.36
43	.35	88	.39	133	.36	178	.36
44	.35	89	.39	134	.36	179	.36
45	.35	90	.39	135	.36	180	.36

Table 4. Spearman rank-order correlation coefficients for ABC news, minus International Problems issue

Day		Day		Day		Day	
1	.36	46	.64*	91	.68*	136	.64*
2	.38	47	.64*	92	.64*	137	.64*
3	.41	48	.64*	93	.64*	138	.64*
4	.63*	49	.60*	94	.64*	139	.64*
5	.63*	50	.60*	95	.64*	140	.64*
6	.57	51	.60*	96	.64*	141	.64*
7	.54	52	.64*	97	.64*	142	.64*
8	.54	53	.62*	98	.64*	143	.64*
9	.46	54	.62*	99	.64*	144	.64*
10	.46	55	.62*	100	.64*	145	.64*
11	.52	56	.62*	101	.64*	146	.64*
12	.52	57	.62*	102	.64*	147	.64*
13	.52	58	.62*	103	.64*	148	.64*
14	.41	59	.62*	104	.64*	149	.64*
15	.46	60	.62*	105	.64*	150	.64*
16	.46	61	.65*	106	.64*	151	.64*
17	.46	62	.68*	107	.64*	152	.64*
18	.46	63	.68*	108	.64*	153	.64*
19	.46	64	.68*	109	.64*	154	.64*
20	.46	65	.68*	110	.64*	155	.64*
21	.46	66	.68*	111	.64*	156	.64*
22	.47	67	.68*	112	.64*	157	.64*
23	.47	68	.68*	113	.64*	158	.64*
24	.55	69	.68*	114	.64*	159	.64*
25	.55	70	.68*	115	.64*	160	.64*
26	.56	71	.68*	116	.64*	161	.64*
27	.55	72	.68*	117	.64*	162	.64*
28	.56	73	.68*	118	.64*	163	.64*
29	.53	74	.68*	119	.64*	164	.64*
30	.55	75	.68*	120	.64*	165	.64*
31	.55	76	.68*	121	.64*	166	.64*
32	.53	77	.68*	122	.64*	167	.64*
33	.56	78	.68*	123	.64*	168	.64*
34	.56	79	.68*	124	.64*	169	.64*
35	.56	80	.68*	125	.64*	170	.64*
36	.56	81	.68*	126	.64*	171	.64*
37	.56	82	.68	127	.64*	172	.64*
38	.58*	83	.68*	128	.64*	173	.64*
39	.58*	84	.68*	129	.64*	174	.64*
40	.58*	85	.68*	130	.64*	175	.64*
41	.65*	86	.68*	131	.64*	176	.64*
42	.62*	87	.68*	132	.64*	177	.64*
43	.62*	88	.68*	133	.64*	178	.64*
44	.67*	89	.68*	134	.64*	179	.64*
45	.67*	90	.68*	135	.64*	180	.64*

* -- $p < .05$

Table 5. Spearman rank-order correlation coefficients for local newscasts

Day		Day	
1	.10	26	.52
2	.35	27	.52
3	.63*	28	.53
4	.65*	29	.53
5	.64*	30	.53
6	.67*	31	.53
7	.67*	32	.52
8	.61*	33	.53
9	.58*	34	.53
10	.58*	35	.51
11	.55	36	.49
12	.55	37	.49
13	.55	38	.53
14	.46	39	.49
15	.58*	40	.49
16	.58*	41	.49
17	.58*	42	.51
18	.53	43	.51
19	.56	44	.51
20	.58*	45	.51
21	.53	46	.51
22	.53	47	.51
23	.55	48	.51
24	.52	49	.51
25	.57	50	.51

* -- $p < .05$

Table 6. Spearman rank-order correlation coefficients for local newspaper

Day		Day		Day		Day	
1	.01	46	.61*	91	.51	136	.51
2	.02	47	.61*	92	.51	137	.51
3	.47	48	.61*	93	.51	138	.51
4	.47	49	.61*	94	.51	139	.51
5	.47	50	.61*	95	.51	140	.51
6	.47	51	.61*	96	.51	141	.51
7	.47	52	.61*	97	.51	142	.51
8	.62*	53	.61*	98	.51	143	.51
9	.62*	54	.61*	99	.51	144	.51
10	.71**	55	.61*	100	.51	145	.51
11	.74**	56	.61*	101	.51	146	.51
12	.74**	57	.61*	102	.51	147	.51
13	.74**	58	.61*	103	.51	148	.51
14	.78**	59	.61*	104	.51	149	.51
15	.81**	60	.58*	105	.51	150	.51
16	.74**	61	.58*	106	.51	151	.51
17	.74**	62	.58*	107	.51	152	.51
18	.81**	63	.58*	108	.51	153	.51
19	.70**	64	.58*	109	.51	154	.51
20	.75**	65	.58*	110	.51	155	.51
21	.75**	66	.58*	111	.51	156	.51
22	.75**	67	.58*	112	.51	157	.51
23	.75**	68	.58*	113	.51	158	.51
24	.75**	69	.58*	114	.51	159	.51
25	.75**	70	.58*	115	.51	160	.51
26	.75**	71	.58*	116	.51	161	.51
27	.75**	72	.58*	117	.51	162	.51
28	.67*	73	.58*	118	.51	163	.51
29	.67*	74	.58*	119	.51	164	.51
30	.67*	75	.58*	120	.51	165	.51
31	.67*	76	.58*	121	.51	166	.51
32	.67*	77	.58*	122	.51	167	.51
33	.67*	78	.58*	123	.51	168	.51
34	.61*	79	.58*	124	.51	169	.51
35	.61*	80	.58*	125	.51	170	.51
36	.61*	81	.58*	126	.51	171	.51
37	.61*	82	.58*	127	.51	172	.51
38	.61*	83	.58*	128	.51	173	.51
39	.61*	84	.54	129	.51	174	.51
40	.61*	85	.54	130	.51	175	.51
41	.61*	86	.54	131	.51	176	.51
42	.61*	87	.54	132	.51	177	.51
43	.61*	88	.51	133	.51	178	.51
44	.61*	89	.51	134	.51	179	.51
45	.61*	90	.51	135	.51	180	.51

* -- $p < .05$; ** -- $p < .01$

Table 7. Optimal time-lags and memory decay time periods for three news media.

Medium	**Optimal time-lags**	**Memory decay time periods**
National network news broadcast	4-5 days & 62-91 days	14 days & beyond 180 days
Local news broadcast	6-7 days	14 days & 21 days
Local newspaper	15 & 18 days	28 days & 84 days

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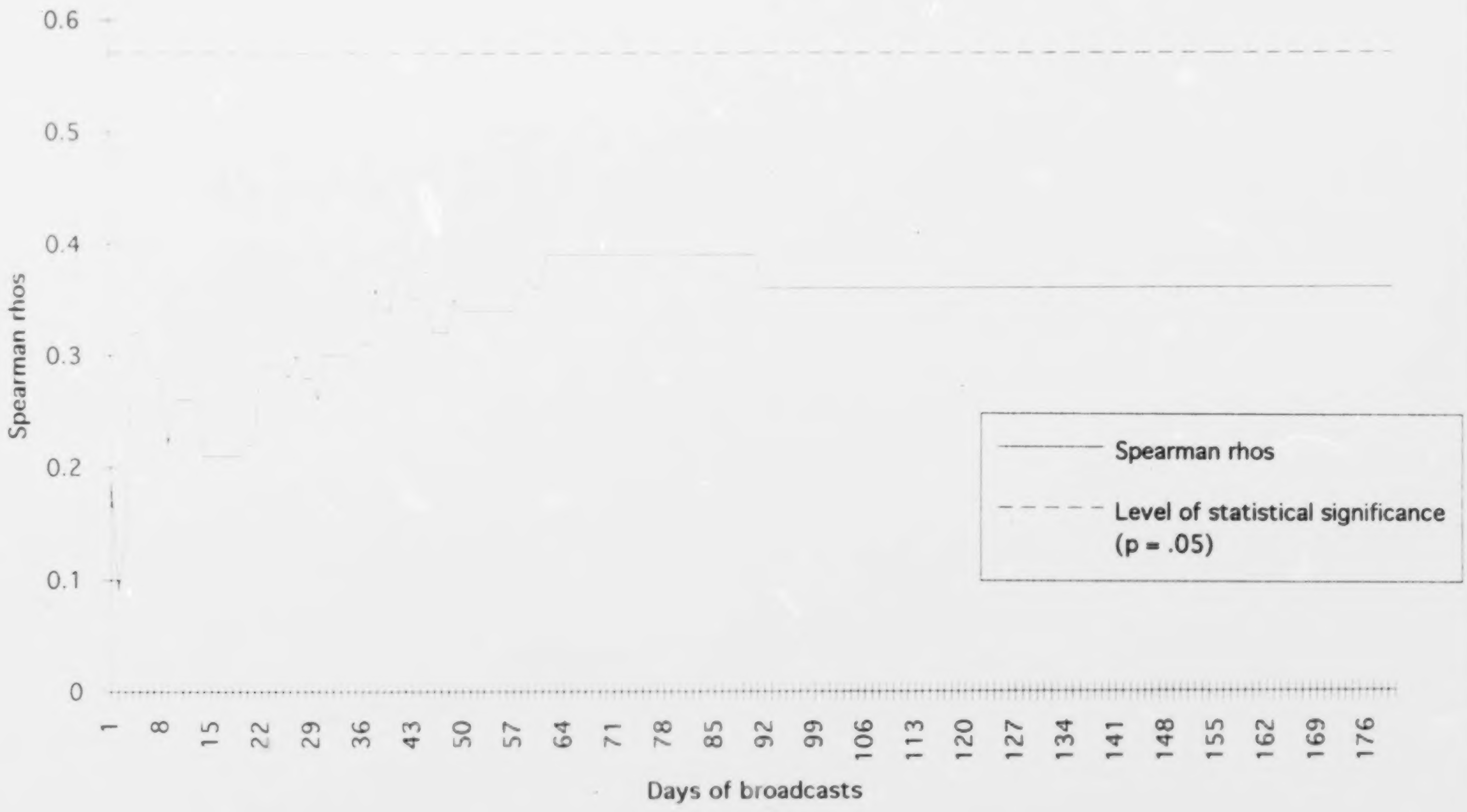


Figure 1. Spearman rank-order correlations for ABC news

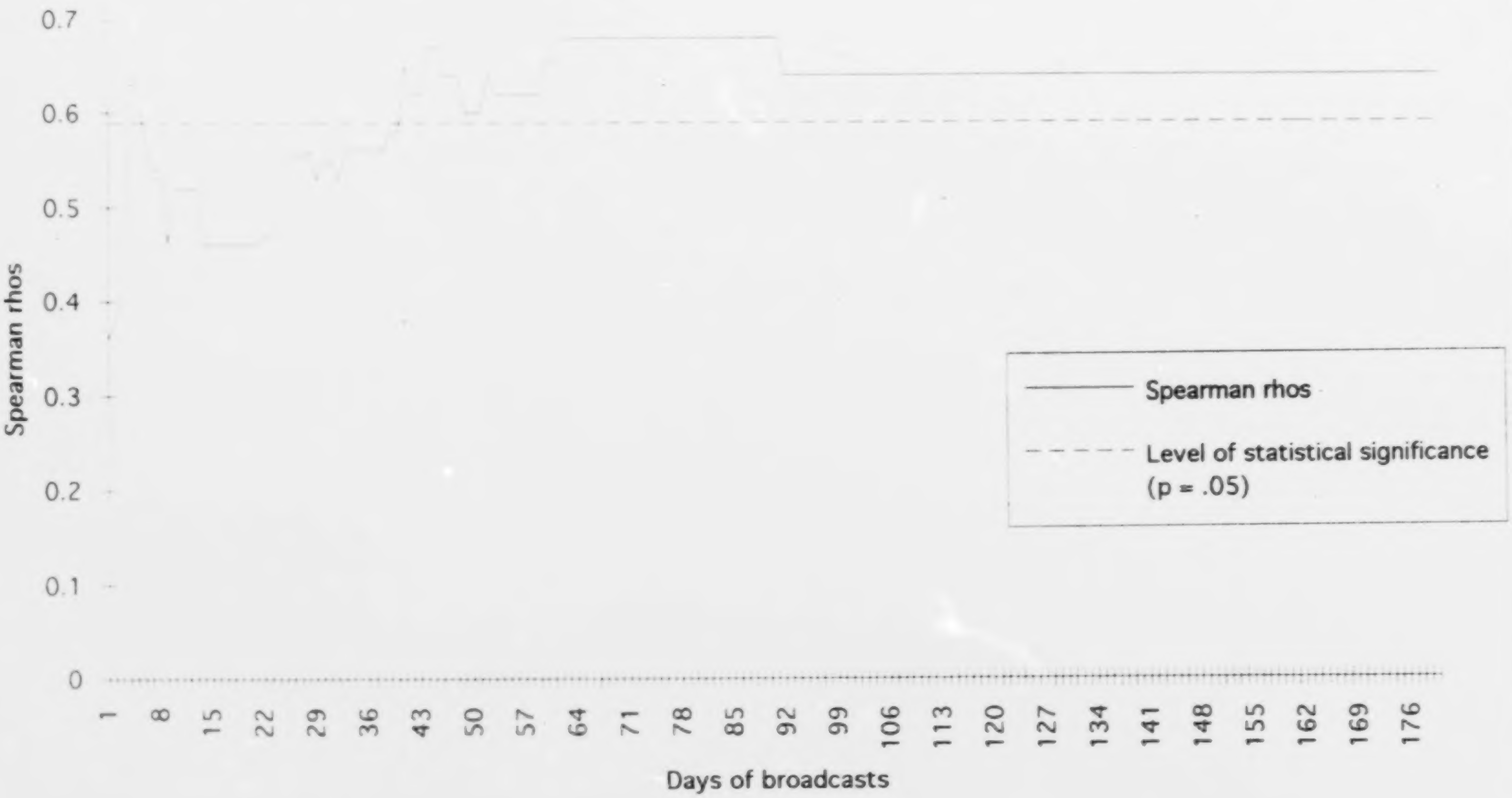


Figure 2. Spearman rank-order correlations for ABC news, minus international problems issue

Figure 3. Spearman rank-order correlations for local television news

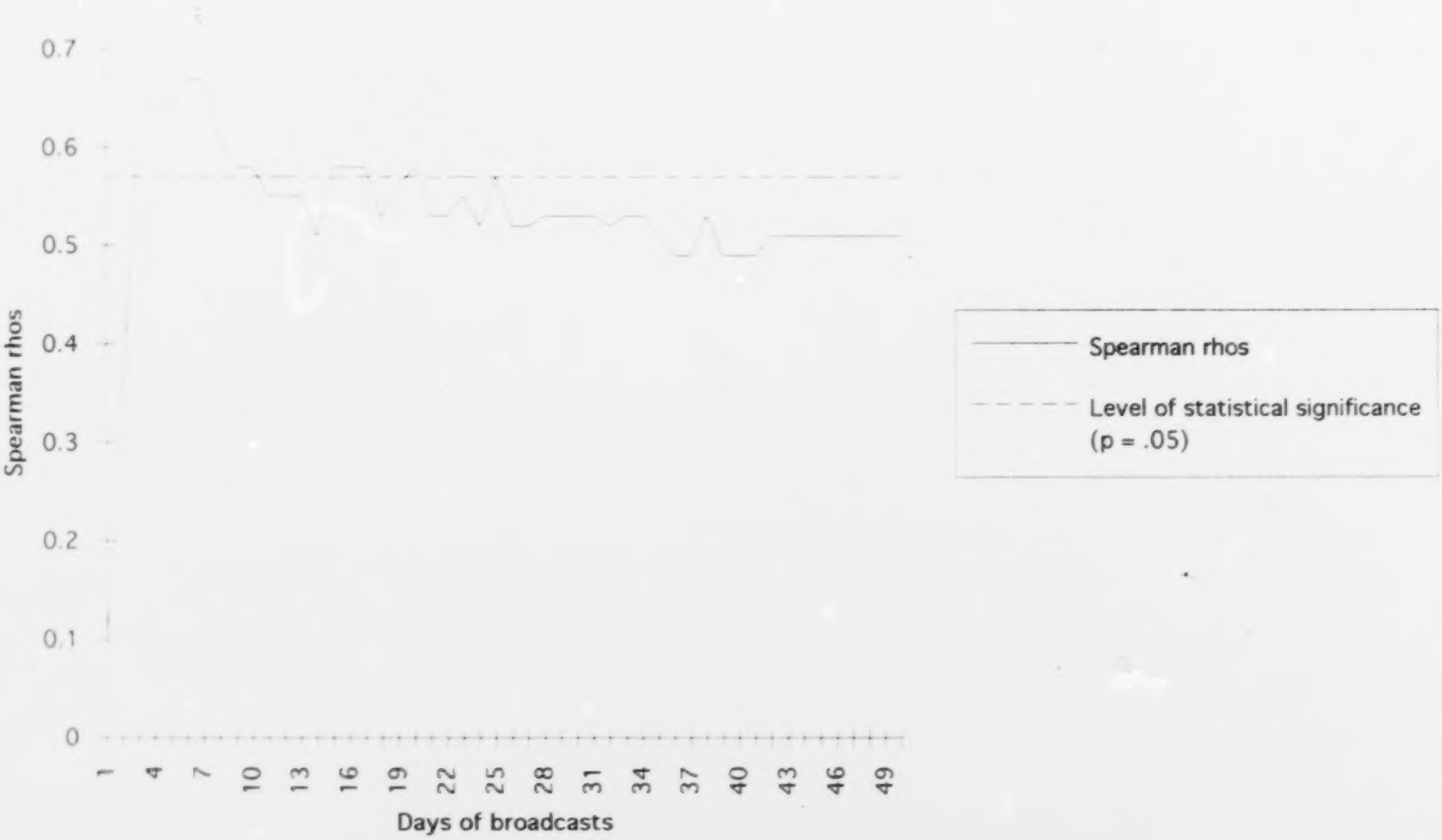
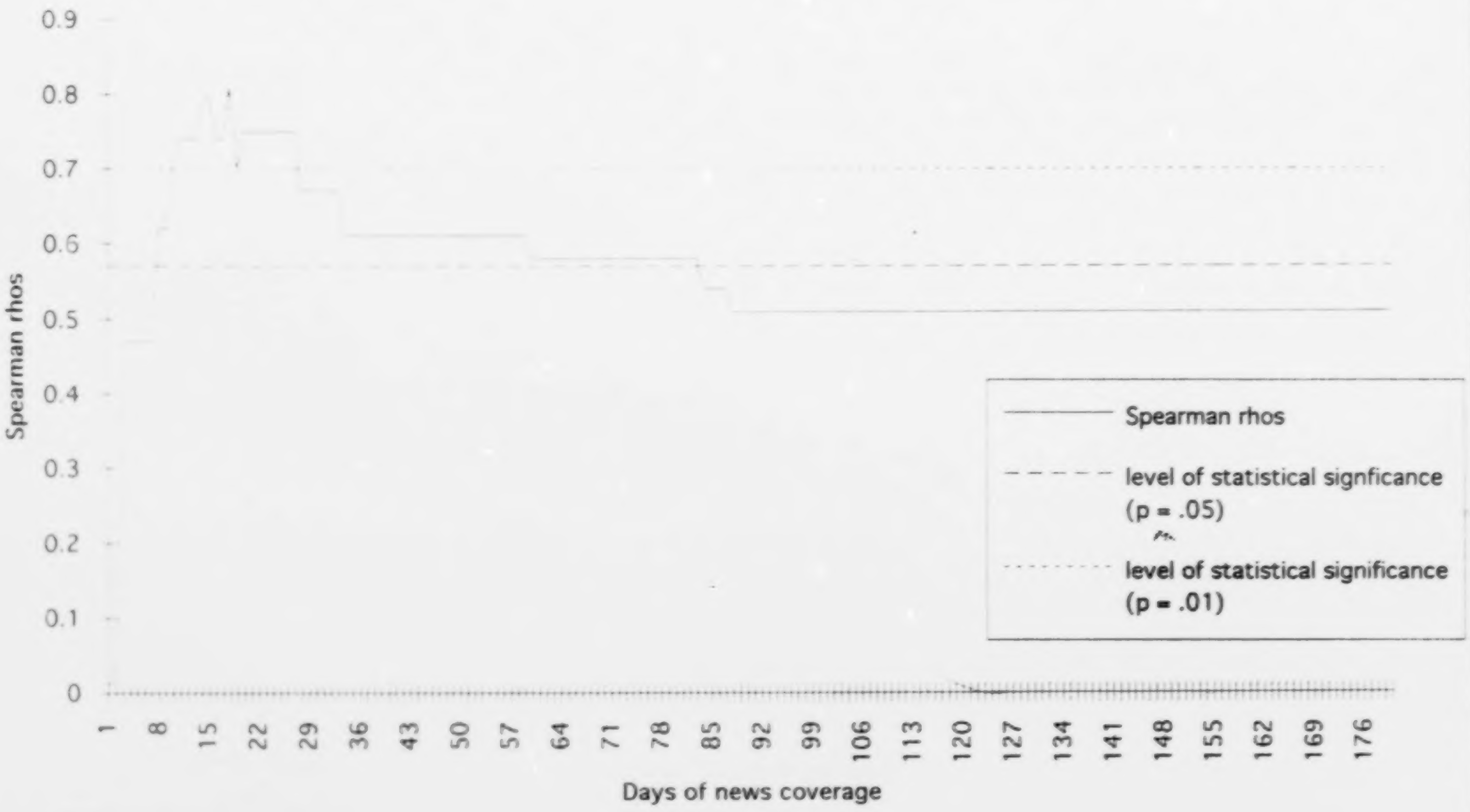


Figure 4. Spearman rank-order correlations for local newspaper



Open, Closed, or Both:

Expanding the Flexibility of Question Formats in Survey Research

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Expanding the Flexibility of Question Formats in Survey Research

One of the early, fundamental challenges in designing a survey instrument is deciding whether to use open-ended (free-response) or closed-ended (fixed-choice) questions. The advantages and disadvantages of each format have been debated at length. Rossi, Wright and Anderson (1983), for example, note that open-ended questions provoke answers in the respondents' own words, uninfluenced by any specific alternatives suggested by the interviewer. Singleton, Straits, Straits and McAllister (1988) would add that open-ended questions are especially valuable at the beginning of a questionnaire, to induce respondents to "warm up" to the interview by speaking freely on a topic without being channeled into any specific line of thinking.

There are major disadvantages as well to open-ended questions. De Vaus (1990) points out that this format demands more effort from respondents, who may be unwilling to reveal their thoughts in their own words -- especially if they feel their responses may be perceived as socially undesirable. This format's greatest drawback, which Rossi, Wright and Anderson (1983) emphasize, is in the reliability of its measurement. No matter how well trained the coders are, the process of translating respondents' spontaneous musings to numerical summaries invariably results in some degree of error.

With closed-ended questions, the reliability of the measurement is generally much higher: The respondent has numerically "coded" her response at the time she gives it.

De Vaus adds that closed-ended questions are not only less demanding (which is important in settings such as a lengthy telephone interview) but they do not arbitrarily discriminate between the glib and verbally reticent respondent. More importantly, the closed-ended format enables the questions to follow the structure of the theoretical model that is driving the study.

But closed-ended formats too have their drawbacks. If there is an unintended nuance in the wording of a question, that nuance may threaten the validity of the item. And because of its lack of spontaneity, it may force respondents to choose among alternatives that do not correspond to their true feelings, or it may suggest responses that they never would have considered otherwise (Rossi, Wright & Anderson, 1983).

Several contemporary researchers still cite Kahn and Cannell (1957) and their criteria for using open-ended questions. They recommend this format when the research seeks a basis upon which opinions are founded; when a spontaneous, uninfluenced response is sought; and when respondents are unlikely to have given previous thought to the matter in question.

But in virtually all of the methodological discussion, the assumption seems to be that the researcher should choose one format or the other, depending on the needs of the particular project. The purpose of this paper is to question that assumption and to explore, by use of a case study, the possibility of combining open-ended and closed-ended questions in the same survey instrument, using the same methods of quantitative analysis, in pursuit of answers to the same research question.

A Case in Point: Journalistic Ethics

The case study begins with a survey of 118 journalists regarding their decision-making process as they consider an ethical dilemma. A theoretical framework was constructed through the adaptation of a more comprehensive model of influences on media content, by Shoemaker and Reese (1991). The overall theoretical goal for the present model is to learn the relative importance of each determinant in influencing a particular journalistic behavior and thus influencing the content of the media. The present model proposes seven social determinants of ethical decision-making:

- Individual -- the personal background and style of moral reasoning that each journalist brings to her work;
- Small Group -- the influence of peers and informal social constraints;
- Organization -- company policies and other formal or structural constraints;
- Competition -- reaction to (or anticipation of) the work of competing media;
- Occupation -- the influence of training, norms, professional codes of ethics and other notions of professionalism;
- Extramedia -- consideration of news subjects, news sources and audiences;
- Legal -- the influence of law, in both formal and informal constructions.

Shoemaker and Reese suggest that there exists a "hierarchy of influences" on media content, and one of the key research questions here is whether such a hierarchy exists in influencing ethical decision-making (which in itself can be viewed as a subset of antecedents of media content).

This conception of influences on ethical decision-making would seem to challenge the more traditional assumption among media ethicists (see for example Lambeth, 1986, and Klaidman & Beauchamp, 1986) that ethics is done through a process of moral reasoning that uses, either inductively or deductively, moral principles. The implication is that the process is internal and highly individual. Even much of the empirical work in this area suggests the notion of individual, autonomous moral agency (see for example Meyer, 1987; Wright, 1989; Shamir, Reed & Connell, 1990; Singletary, Caudill, Caudill & White, 1990; White & Pearce, 1991; White & Singletary, 1993).

The principal research instrument was a telephone survey of 118 probability-sampled journalists in southern Wisconsin, designed to address the fundamental research questions: Under what conditions and influences is a certain decision made in an ethical situation, and is there a hierarchy of these influences?

The telephone interview schedule began with the presentation of three hypothetical scenarios. In the first, a news reporter and photographer sneak into a nursing home (on which they are doing an investigative piece, and from which they had been formally denied access) by posing as janitors. The second scenario concerns whether to publish (or broadcast) the name of a teen-age suspect in a highly-publicized murder in the community. In the third situation, a mayoral candidate is the target of allegations, lodged by disgruntled former employees, of improprieties. A news outlet decides to report the allegations without verifying them or presenting the candidate's side of the story.

The first question after the telling of each scenario is whether the journalist's behavior is acceptable to the respondent, on a numerical rating scale of one to ten, where one is utterly unacceptable and ten is perfectly acceptable. This rating of acceptability, especially when it is combined across all three scenarios, becomes the key dependent variable in the study.

Of greater concern in this study than the perceptions of rightness or wrongness, however, are the primary independent variables that comprise the hierarchy of influences upon that rating of acceptability. The relative strength of each variable concept was measured in two ways: in an open-ended and a closed-ended format of questioning. First, after rating each story for its journalistic acceptability, the respondent was asked to discuss, in an open-ended format, what factors or considerations led to the assessment of acceptability. (Later, the first three idea elements mentioned by each respondent were categorized according to the social determinant each represented.) After thus reacting to each scenario in her own words, the respondent then reacted to closed-ended items, each intended to represent one of the seven social determinants. Respondents were asked to rate the salience of each statement on a scale of one to ten, where one meant that the statement was irrelevant to her thinking about the scenario, and ten meant that the statement was highly important to her thinking. The set of closed-ended items was read three times, once after each scenario.[1]

The central hypothesis of the study was this:

Among the seven independent variable concepts, the Individual influence will enjoy the strongest predictive value across all three scenarios. This reflects the general findings from the literature that personal, intrinsic values, largely unfiltered by social influences, have great predictive power. The hypothesis was tested with a comparison of the means of the relevant items, and with multiple regression to determine the relative power of influence enjoyed by each of the key independent variables. As tables 1 through 4 demonstrate, the hypothesis lies in disgrance. The overall salience of Individual items was lower than the mean for all determinants, and the relationship between the items and the dependent variable also remained nonsignificant throughout the regression analysis. Individual moral autonomy seems not to prevail in ethical decision-making; the data support the notion of a far more dynamic and complex pattern of social influences.

But the results of each statistical analysis are stated here twice: once each time for open-ended responses and closed-ended responses. Inferring from the discussion of the literature above on open-ended methods, it seemed possible that through a free-response format, social influences might be identified that were not included among the closed-ended indicators. These conditions seem to argue for the use of open-ended questions, especially considering the context of journalism ethics. Most of the existing empirical work tells us whether journalists accept certain behavior but does not attempt to tell us why or how. Even if the previous surveys presented journalists with a list of possible reasons for their ethical decisions, the bias of social desirability (DeMaio, 1984) might nudge the respondent toward the most virtuous-sounding of the choices. Respondents naturally want to make a good impression on the researchers and the

Table 1

Means of the Open-Ended Measures of Social Determinants

	Nursing Home		Juvenile's Name		Candidate		**Overall**
Individual	.32	(.52)	.36	(.59)	.13**	(.34)	**.81****
Small Group	.03**	(.18)	.00**	(.00)	.02**	(.13)	**.05****
Organizational	.44	(.61)	.59**	(.52)	.11**	(.76)	**1.10**
Occupational	.95**	(.75)	.25	(.47)	1.47**	(.76)	**2.66****
Extramedia	.36	(.55)	.30	(.60)	.23*	(.25)	**.89**
Legal	.11**	(.34)	.38	(.62)	.11**	(.48)	**.60****
Column mean	**.37**		**.31**		**.34**		**1.02**

n = 118
Notes:

1) Values expressed are the means (and standard deviations) of the number of mentions coded into each variable category for each scenario.

2) Asterisks denote significant difference, either higher or lower, from the mean of mentions for that particular column, as determined by a two-tailed t-test (* p<.05, ** p<.01).

research audience by choosing the most ethically sensitive response.

However, the need to test a specifically-structured theoretical model equally strongly suggests the use of a corresponding structure of closed-ended questions. The approach therefore has been to employ both methods. It is hoped here that the indirect wording of the closed-ended indicators and the scattered ordering of the items has reduced the possibility of desirability bias or pattern bias.

Table 2

Means of the Closed-ended Measures of Social Determinants

	Nursing Home	Juvenile's Name	Candidate	Overall
Individual	**6.97 (2.43)**	**6.63* (2.59)**	**6.96 (2.38)**	**6.87 (2.17)**
Personal Values	7.01 (2.87)	6.69 (2.80)	6.91 (2.68)	6.88 (2.44)
Own Logic	6.92 (2.68)	6.56* (2.69)	6.95 (2.49)	6.82 (2.31)
Small Group	**7.00 (2.24)**	**7.38 (2.10)**	**7.47** (1.95)**	**7.27 (1.81)**
Observe others	6.01** (2.75)	6.47* (2.77)	6.47 (2.59)	6.31* (2.35)
Talk to others	7.99** (2.70)	8.31** (2.40)	8.47** (1.93)	8.26** (2.04)
Organizational	**8.10** (2.77)**	**9.15** (1.68)**	**7.63** (2.56)**	**8.32** (1.92)**
Competition	**6.11** (2.67)**	**5.53** (2.65)**	**6.17** (2.71)**	**5.97** (2.35)**
Occupational	**7.27 (2.11)**	**7.46 (2.07)**	**7.41** (1.80)**	**7.37* (1.69)**
'Professionalism'	7.86** (2.59)	7.73* (2.26)	8.07** (1.95)	7.90** (1.88)
Code of Ethics	6.64 (2.61)	7.19 (2.68)	6.77 (2.38)	6.87 (2.14)
Extramedia	**5.09** (2.47)**	**5.90** (2.40)**	**5.58** (2.27)**	**5.53** (1.95)**
Audience	5.44** (2.87)	5.43** (2.71)	5.98** (2.67)	5.61** (2.32)
Subjects	4.70** (3.21)	6.34* (2.76)	5.17** (2.62)	5.42** (2.21)
Legal	**7.83** (2.69)**	**8.16** (1.67)**	**7.21 (2.23)**	**7.73** (1.72)**
The Law Itself	8.28** (2.44)	9.26** (1.35)	7.68** (2.53)	8.40** (1.65)
Threat of Suit	7.38 (2.69)	7.07 (2.76)	6.73 (2.93)	7.07 (2.42)
Column mean	**6.91**	**7.17**	**6.92**	**7.01**

n = 118

Notes:

1) Values expressed are the means (and standard deviations) of the responses (on a scale from 1 to 10) to closed-ended items.

2) The indented phrases represent the individual items that comprise the boldfaced, composite variables immediately above them..

3) Asterisks denote significant difference, either higher or lower, from the mean of the responses for that column, as determined by a two-tailed t-test (* p<.05, ** p<.01).

Table 3

Predicting Acceptability of Journalists' Actions in Ethical Situations

Multiple Regression

OPEN-ENDED RESPONSES

	Simple r	Step 1	Step 2	Step 3	Incr. R^2
Demographics					.04
Gender (male)	.00	.04	.04	.07	
Age	-.16	-.15	-.04	-.04	
Education	.12	.13	.13	.09	
Other Key Characteristics					.03
Ever threatened with a Lawsuit	.11		.19	.19*	
Yrs. in Journalism	-.13		-.16	-.19	
Social Determinants					.13*
Individual	.06			.02	
Small Group	.16			.24*	
Occupational	.08			.09	
Organizational	-.18*			-.13	
Extramedia	.23*			.24*	
Legal	-.08			-.05	
Equation F-ratio					2.39 (.01)

n = 118, ^p<.10, *p<.05, **p<.01

Notes:

1) Dependent variable is the acceptability of journalists' actions, summed across all three scenarios.

2) "Other Key Characteristics" are objective variables whose strong bivariate associations had suggested possible predictive power in a regression equation.

3) "Equation F-ratio" refers to the ANOVA test as to whether the blocks of variables entered in the equation explained a significant amount of the variance in the dependent variable.

Table 4

Predicting Acceptability of Journalists' Actions in Ethical Situations

Multiple Regression

CLOSED-ENDED RESPONSES

	Simple r	Step 1	Step 2	Step 3	Incr. R^2
Demographics					.04
Gender (male)	.00	.04	.04	-.02	
Age	-.16	-.15	-.04	-.11	
Education	.12	.13	.13	.04	
Other Key Characteristics					.03
Ever Threatened with a Lawsuit	.11		.19	.11	
Yrs./ Journalism	-.13		-.16	-.12	
Social Determinants					.15**
Individual	-.04			.00	
Small Group	-.07			.21^	
Competition	.05			.20^	
Organizational	-.21*			-.06	
Occupational	-.23*			-.18	
Extramedia	-.21*			-.22^	
Legal	-.26**			-.26*	
Equation F-ratio					2.40 (.009)

n = 118, ^p<.10, *p<.05, **p<.01

Notes:

1) Dependent variable is the acceptability of journalists' actions, summed across all three scenarios.

2) "Other Key Characteristics" are objective variables whose strong bivariate associations had suggested possible predictive power in a regression equation.

3) In Step 3, the coefficients of Small Group, Competition and Extramedia achieved alpha levels of significance, respectively, of .065, .062, and .053.

4) "Equation F-ratio" refers to the ANOVA test as to whether the blocks of variables entered in the equation explained a significant amount of the variance in the dependent variable.

Some Unsettling Discrepancies

The rationale of multi-method triangulation is that dissimilar methods will suffer different methodological weaknesses, and thus exhibit different patterns of error. If two methods independently produce the same general findings, our confidence in the findings increases. Those hopes were tested statistically in this study, but with results that are not encouraging for direct triangulation. Table 5 shows simple correlations between open-ended response categories and closed-ended response categories, across all three scenarios. The underlined values are the correlations between measures of the same concept -- the measures that we might expect to be highly correlated.

Obviously, they are not. The correlations are nonsignificant, and with two of the concepts, Occupational and Extramedia, they seem to drift toward a negative relationship. There are two possible interpretations of the non-correspondence: One of the two methods has utterly failed to capture the meaning of the social determinants, and therefore it should be rejected as inaccurate and invalid. Or, the two methods are simply capturing different dimensions of the same concepts and should both be reported.

The discrepancy is not unique to this project. To revisit the literature more specifically, Schuman and Presser (1979) systematically explored the discrepancy in results by designing part of a survey instrument with parallel open and closed questions. Half the respondents were randomly assigned to an open-ended question, and half to a closed-ended version of the same question (asking what benefits of a job the respondent would most prefer). The two versions produced different results: For example, nearly 20

Table 5

Relationships Between Open- and Closed-Ended Measures Of the Same Independent Variable Concepts

Closed-Ended	*Open-Ended Measures* Indiv.	Sm Grp.	Org.	Occup.	Extram.	Legal
Individual	.10	-.06	-.00	-.09	-.01	-.03
Small Group	.00	.03	.11	.02	-.08	-.16
Organizational	-.09	-.01	-.01	.15	-.24*	.02
Competitive	-.03	-.04	-.01	.05	.10	.04
Occupational	.12	-.04	-.01	-.06	-.12	.01
Extramedia	-.11	-.07	.12	.04	-.04	-.06
Legal	-.05	.16	.24*	-.02	-.17	-.01

n = 118, *p<.05, **p<.01

Notes:

1) Values shown are Pearson correlation coefficients.
2) Underlined coefficients indicate theoretically similar concepts.
3) Values shown summarize results across all three scenarios.

percent of the closed-ended respondents cited advancement as the most important job value, whereas only 2 percent preferred those opportunities in the open-ended responses. Inexplicably, however, the authors, like many others on this subject (see Kahn & Cannell, 1957; Rossi *et al.*, 1983; De Vaus, 1990; and Singleton et al., 1988) conclude that properly constructed closed-ended items can provide more valid information than open-ended responses can, and they recommend the use of open-ended questions only in certain exploratory or qualitative situations.

But is it really just a matter of superior validity in one method and inferior validity in another? The validity of each method can be tested, one against the other, more directly than in Schuman's and Presser's experiment. One strategy is to ask which

Table 6

Comparing the Predictive Power of Open- and Closed-ended Measures of the Same Independent Variable Concepts

Multiple Regression

Order of Entering Blocks	Incr. R^2
Closed-ended	.17**
Open-ended	.08
Open-ended	.13*
Closed-ended	.13*

n = 118, *p<.05, **p<.01
Notes:

1) Dependent variable is the acceptability of journalists' actions, summed across all three scenarios.

2) Each block consisted of the aggregate scores, across all three scenarios, of the six (open-ended) or seven (closed-ended) independent variables being measured.

set of measures, open-ended or closed-ended, seems to have greater power to predict the dependent variable (in our case, the acceptability of the journalist's actions in each scenario). If one method was failing to capture the meaning of the concepts, its results would be scattered and it would probably fail to explain much of the variance of the dependent variable. Thus a multiple regression was computed from this study's data that pitted the block of closed-ended variables against the block of open-ended variables. The results are shown in Table 6.

When the closed-ended block of variables was entered first in the regression equation, its incremental R-square (the standard measure for the degree of explanation of total variance) was substnatially greater than that of the open-ended variables. However, when the order of entry was reversed, the incremental R-squares were almost identical -- and both significant.

The test seems to be saying that both open- and closed-ended responses, while at times unrelated to each other, both contribute significantly to explanations for why the respondents answered as they did on the matter of acceptability. Could it be that each method is tapping a different set of (equally valid) considerations? This survey instrument included only two closed-ended items to represent each social determinant. No matter how accurately the two represented that concept, there are certainly many other facets (dimensions) of the same concept that have meaning for the respondent but simply are not tapped in the closed-ended instrument. For example, the items measuring Occupational influence covered a general conception of professionalism, and a reference to a professional code of ethics. In the open-ended responses, a large number of respondents cited specific norms of "professional" journalistic behavior -- not necessarily thinking about the origins of those norms or about professionalism *per se*. It is entirely possible that codes of conduct could be one dimension of the Occupational influence, training could be another dimension, and the situation-specific norms of journalism -- the "do's and don't's" -- could be another dimension. The open- and closed-ended measures together did tap all three, but no single item or method managed to tap the three at once.

To cite a more intriguing example, the actual directions of the Extramedia influence, in open- and closed-ended formats, are different (see tables 3 and 4). In the open-ended responses, journalists who cited Extramedia factors on their own tended to support the ethically and legally risky decisions that were made in the scenarios. In the closed-ended format, with an equally strong degree of influence, those who assigned importance to Extramedia factors tended to *disapprove* of the hypothetical actions. How can we explain this apparent contradiction?

As with the other social determinants, Extramedia was represented in the survey by two closed-ended indicators. "I wonder what the (subject or source) will think when they see the story" represents the perception of the personal influence of news sources or news subjects. The other indicator, "I wonder what our readers (viewers) will think when they see this story" represents the more general anticipation of audience reaction. It is hardly surprising that statements of concern over the reactions of sources, subjects or audience would induce a reluctance to proceed with the risky story.

The open-ended responses were not tapping the same dimension of the concept. There were references to audience and subjects, to be sure, but a substantial number of responses mentioned a different, unanticipated aspect of audience influence: the broader impact of a story on the general community. Whether the "public benefit" (like other aspects of audience influence) is ever measured by news organizations is a matter of some doubt. The suggestion here is that its presence does nonetheless play a part -- at least as documented by several open-ended responses -- in the journalist's decision. The other unanticipated piece of reasoning in the open-ended responses concerned another dimension of source influence -- a notion we might summarize as "just deserts." The feeling among several respondents is that the source or subject involved deserves whatever consequences might arise from the ethically risky story; therefore the decision to proceed is justifiable.

Differences in Cognition?

There is also very likely a difference in the cognitive processing and response strategies in the two different methodsof questioning. There has been considerable work in the field of social cognition on questions rather close to this one. Social psychologists, working primarily in the domain of personality or candidate evaluation, have discovered many cases in which people's open-ended thoughts are uncorrelated with responses to closed-ended questions about the same subject (Zaller, 1992). Studies have distinguished two processes of evaluative judgment: memory-based and "on-line" (Hastie & Park, 1986). Memory-based judgment relies on the retrieval of facts, reasoning and attitudes from long-term memory; "on-line" processing involves the frequent and immediate updating and adjustment of evaluations as new pieces of information are acquired. Thus an on-line evaluation is not the same independent judgment that a memory-based judgment is, because it has been colored by recent cues as to the evaluation. Lodge, McGraw and Stroh (1989) found that on-line processing is a stronger determinant than memory-based judgment of citizens' evaluations of political candidates. They concluded, however, that the human mind does not rely exclusively on either mode of decision-making. Independent, long-term recall memory still seems to have an influence on one's evaluative decision. But on-line processing seems to have a stronger relationship to the decision, they found, under many conditions.

The research on cognition has obvious implications for the present methodological discussion. The closed-ended response is a response to suggestion. It relies on recognition memory and would seem to use the mode of "on-line" processing, as respondents are given cues that immediately update their evaluation of the forces at work. Even if a social determinant -- Small Group influence, for example -- never entered the mind of the respondent during open-ended questioning, it was always presented as a closed-ended option, and almost always the respondent gave those items some level of numerical score. The item may remind the respondent of an influence that is honestly important, and the score reflects that importance. Alternatively, it could simply invoke social desirability, wherein the respondent feels she *ought to have* mentioned that influence (personal values or the law, for example) in her open-ended response and now has an opportunity to declare that determinant's importance. The open-ended response, on the other hand, sought at the beginning of the interview schedule, is spontaneous and unprompted. It relies on recall memory. It may capture the most "honest" thoughts off the top of the respondent's head, often in the form of schematics or heuristic solutions that are applied to everyday problems. But this format is also vulnerable to the respondent's inability to summarize comprehensively her view of the situation quickly over the telephone. She could simply forget to mention a consideration that is extremely important to her.

The most instructive example of this difference from the present study is in the measurement of the Legal influence on an ethical decision. In Table 2 we see a significantly high mean response for the closed-ended Legal items, and in Table 4 the Legal influence held its significant Beta coefficient throughout the regression of closed-ended variables. And the association was negative. When asked to assess the salience of Legal considerations as closed-ended items, the journalists were usually quick to accord them high salience, and that appreciation led in turn to a disapproval of the ethically risky actions of the journalists in the hypothetical scenarios.

But the recognition memory on display in the closed-ended format seems not to tell the whole story: When left to their own recall memory, the respondents did not often think to mention Legal considerations. The open-ended format seems to put Legal influence near the bottom of the hierarchy. According to Table 1, a Legal "mention" was made on the average of only once every five respondents. In terms of its influence on the dependent variable, the Legal variable in the open-ended format never approaches significance in one direction or the other. The discrepancy suggests that perhaps the influence of the law is often mediated by the other social influences. For example, the open-ended response "You just don't use the name of a juvenile suspect" was coded as an Occupational consideration -- a behavioral norm common to most journalists. It could be, however, that the pronouncement was also a reflection of some legal result that preceded the understanding of that norm, such as a lawsuit or contempt-of-court citation against a colleague, and is now incorporated into that journalist's conception of professionalism. While a detailed discussion of the ethical and legal implications of the findings is beyond the purview of this particular paper, it is worth noting that journalists do hold a fairly high degree of respect for the legal rules of journalism, but only when reminded of those rules. Left to their own devices, they more likely fall under the influence of any of the other determinants in the model.

Computational Differences

Not only can conceptualization and cognition explain differences between the two methods' results, but the statistical organization of the results also suggests different results as well. The closed-ended items were given scores between one and ten, and computed on the same scale. With open-ended responses, the first three idea elements (see Gamson & Modigliani, 1987) expressed were coded, and these "mentions" were given equal weight as they were counted. Thus a Small Group influence could be important to a respondent, but the first three mentions of her response may have been bundled in a monologue about occupational norms and company policy. While she may have given the Small Group items the exact same score as she gave Occupational and Organizational items in the closed-ended segment, her open-ended response necessarily gives Small Group a score of zero, simply because it was not among her first three mentions. Indeed, Small Group may not have been even among the first ten mentions if extended questioning were conducted, but the determinant of Small Groups may still be important to her.

Conclusion

Thus it seems unwise to jettison either method of measurement. Just as Lodge, McGraw and Stroh made room for both cognitive processes in their conceptual model of political evaluations, we can utilize both methods of question formats to shed light on the present research questions. The open-ended responses were spontaneous, without a theoretical superstructure imposed on the respondents. The closed-ended items represented a structure that does seem to carry a great deal of theoretical validity. In most of the reporting of the results of this study, therefore, the closed-ended and open-ended findings appear together, with their similarities or contrasts open for discussion.

One of the basic tasks of empirical work in the behavioral sciences, it seems, is to measure the indicators of variable concepts. It is highly unlikely, however, that any one set of indicators can capture and represent every dimension that is imbedded in the meaning of a concept. Therefore it is unlikely that open-ended and closed-ended strategies to address the same research question will yield highly correlated results every time. Part of the reason for the lack of correlation could be that each format draws upon a different cognitive process -- each with an influence upon decision-making, but one with a more direct influence than the other. Further research, perhaps in a more controlled (experimental) setting, may provide some elaboration of this cognitive relationship.

It seems clear from the results presented here that researchers who choose one question format at the expense of the other are choosing not to gather information that may be pertinent to their research objectives. When both formats are used the results are certainly sloppier, and require far more qualifiers in their reporting. But the results are also richer -- and closer to the complex behavioral "realities" that this research is meant to discover.

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Notes

1. For the open-ended responses, the author developed a detailed coding guide that would enable each response to be categorized as a reflection of one of the seven independent variable concepts also being examined in the closed-ended format. Coders coded the first three idea elements ("mentions") of each respondent on each question. Two coders were used, with a reliability score (using Scott's pi) of .724.

Throughout the study three levels of statistical significance are noted, rather than the customary two levels. Significance at a probability level of less than .01, less than .05 and less than .10 are noted. The third, unusual, level is reported in order to enable a discussion of results whose significance narrowly misses the standard .05 level. When regressions are computed with a small sample size and a large number of independent variables, statistical significance at less than .05 is more difficult to achieve than with a larger sample and fewer variables. Thus the results at the "looser" level of significance are noted, but they are not accorded the same confidence as results at levels of less than .05.

TELLING THE TRUTH:

RESPONDENT ACCURACY IN MASS MEDIA POLLING

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TELLING THE TRUTH:
RESPONDENT ACCURACY IN MASS MEDIA POLLING

Abstract

Both the journalist and the academic have an interest in ensuring that public opinion polls are as accurate as possible. This study looked at self-reports by 639 registered voters in Arizona as to whether they cast a ballot in the 1992 presidential election, then validated their responses based on election records. Differences between accurate and inaccurate respondents, including their media exposure levels and attitudes toward polling in general, were non-significant or spurious. The high cost of validation checks appeared to outweigh any significant benefit as a means of ensuring accuracy.

TELLING THE TRUTH: RESPONDENT ACCURACY IN MASS MEDIA POLLING

Public opinion polls fulfill several functions for the mass media. They can serve as the first measure of citizen opinion on an emerging issue; [1] allow reporters to explore the context in which events take place; [2] and enable news organizations to make news as well as report it.[3] Journalists and social scientists use polls in different manners, with the former emphasizing their immediate news value and the latter focusing on their value in explaining a general social process.[4] Media coverage of polls has been criticized for serving as a form of "checkbook journalism"; [5] for encouraging politicians and government policy makers to make decisions based on short-term, parochial interests;[6] and for failing to fully inform readers about a poll's methodology[7] or the significance of the findings.[8]

Journalists and social scientists share a desire to ensure that poll data accurately reflect the views of the public. Attempts to ensure accuracy can be affected by a concern that goes to the heart of the issue of validity in survey research: whether the respondents are telling the truth about the issues on which they comment. Survey researchers "rarely go beyond self-report"[9] in ascertaining whether respondents are telling the truth during an interview. More than 50 years ago, Herbert Hyman summarized the concern of survey researchers in the title of his paper, "Do They Tell the Truth".[10] That concern has not changed and has been underscored by the transformation of survey research from a tool for academic researchers to an instrument that helps shape political campaigns[11] and public policy.[12]

Despite the reliance on self-reporting, relatively little is known about the accuracy of the self-reporting method of data collection.[13] More emphasis has been given to the twin issue of the reliability of self-reports than to their validity.[14] Validation studies have been done on such sensitive issues as drug use, bankruptcies and arrests for drunken driving,[15] as well as voting.[16] There is evidence that socially desirable activities like voter registration, voting and charitable contributions tend to be over-reported, while undesirable experiences like bankruptcy tend to be under-reported. [17] In voting validation projects, the process of double checking turnout levels is difficult, expensive and time-consuming and can generate information on only a limited number of variables in a survey (e.g., voting turnout) that are verifiable.[18] The National Election Study, which validated self-reported turnout in past elections, chose not to do so in 1992. In media-sponsored polls, the need to make deadlines makes record validation checks on poll data even less likely. [19]

The tendency of respondents to inflate their self-reports on voting has been a chronic problem in public opinion polling. Wolfinger and Rosenstone reported that since 1948, "reported turnout in national post-election surveys has never been less than 5% higher than the best estimate of the true turnout figure, and the gap between reported and actual turnout has sometimes approached 20%".[20] Four efforts by the National Election Study to validate turnout records found between 20% and 30% of respondents over-reported voting.[21] Other studies suggested that in terms of self-reported voting behavior, from 12% to 15% of respondents provided inaccurate responses after their answers were compared to official voting records.[22]

There is less agreement regarding which respondent characteristics and attitudes might be significant predictors of misreporting of voting. Some studies have found respondents who were inaccurate in describing their voting behavior matched the profile of non-voters in general: young, lower income, non-white citizens with lower political interest.[23] Other researchers suggest that inaccurate reporters of votes were not different from actual voters in terms of characteristics and attitudes.[24] For example, Tittle and Hill concluded that "in every instance, those incorrectly claiming that they had voted resembled more closely the actual voters than nonvoters."[25] A recent study found education had an independent effect on voter misreporting: the better educated felt more pressure to misreport their vote because of social desirability.[26]

Little work has been done on two other potential explanations for the variance in accuracy of self-reports: the respondents' level of involvement with the news media and their attitudes toward the accuracy of polling in general. Respondents who attend to the news media on a regular basis and those who generally believe polls to be accurate would be expected to be more likely to be accurate in their responses than their counterparts due to a desire to avoid distorting the news reports and the polls they find useful and reliable.

This study attempts to clarify the conflicting evidence on whether inaccurate respondents are significantly different from accurate respondents. It offers an initial exploration of whether media exposure and attitudes toward polling significantly affect the accuracy of responses. The study, based on self-reported turnout levels among Arizona voters in the 1992 presidential election, also addresses a broader question: given the high cost of validation checks to ensure accuracy of poll results, does the level of misreporting justify the effort required to validate poll results.

Method

The study was based on a two-stage research project. The first stage involved conducting a statewide telephone survey of 639 registered voters in Arizona between Nov. 4-11, the week after the 1992 presidential election. The survey was conducted as part of an ongoing polling program in the Media Research Program of the Department of Journalism and Telecommunication at Arizona State University. It was conducted in conjunction with public television station KAET-TV, whose volunteers were trained to make the telephone calls under the training and direct supervision of the Media Research Program.

Respondents were asked to address a variety of issues, including whether they had voted in the preceding week's election. They represented a systematic random sample of voters generated from a list of all registered voters in the state. A comparison of the demographic characteristics of the sample statistics to known population parameters indicated the sample was representative of the electorate. The overall confidence interval for the sample, based on a 95% confidence level and dichotomous answers estimated at .50, is plus or minus 3.9% on responses from the entire sample and higher for responses from subgroups.

The second stage of the study was based on a validation check to determine whether respondents actually voted. The authors validated self-reported information on voting by examining voting records at each of the state's county voter registration offices. Of the 639 original respondents, 592 (92%) were successfully validated; the remainder were removed from the study. The major cause of the 47 voters not being validated was differences between the name of the person as offered during the initial telephone survey and the formal registration name on the records; when the names did not precisely match, the respondents were dropped from the survey.

Accurate and inaccrate respondents were then analyzed based on their demographic characteristics, media use patterns, political characteristics and attitudes toward polling in general. Due to the nominal nature of the dependent variable, Cramer's V, a Chi-Square based measure, was used to measure the level of association. It can attain the value of 1 for tables of any dimension, thereby facilitating comparisons across studies.

The high turnout in the 1992 presidential contest, which reduced the number of non-voters who might overstate their vote, served as a limiting factor for this study. Turnout in Arizona reached 75.7% of registered voters, up from

68.1% in 1988.[27] A lower turnout level would have resulted in more non-voters who might have been tempted to tell interviewers they had voted so as to be associated with a socially desirable activity. Similarly, the use of only registered voters as the subjects for the study also may have limited the variance in accuracy of responses; if non-registered voters also had been included, the social desirability associated with voting may have prompted a greater percentage of non-registered voters to say they cast a ballot. Finally, the study also may have been affected by the accuracy of the master list of voters from which the sample was drawn. The list was generated in early October and did not include all final registrants.

Results

The results of the self-reported voting and the validated voting levels are presented in Table 1. The validation check showed that 7.6% of registered voters in Arizona misrepresented their voting activity after the 1992 presidential election, while 92.4% accurately reported whether they had cast a ballot. Of the 41 inaccurate respondents, 39 claimed to have voted while the validation check showed they had not done so. Interestingly, two respondents said they had not voted while the validation check indicated they had done so.

The analysis then turned to independent variables that may help explain the variance in the accuracy of the self-reports. The initial analysis of five demographic variables shown in Table 2 found two -- race and age -- were significantly related to the accuracy of responses (although at the weak levels of

V=.12, p < .01 for race and V=.11, p < .05 for age). Non-white respondents and younger respondents appeared less likely to be accurate in reporting whether they voted.

The initial analysis then looked at the media use patterns of respondents and the accuracy of responses on voting to see if higher media exposure levels were associated with higher levels of accuracy. The survey asked respondents how many days per week they "watch the evening news on TV" and read a newspaper; it also asked how much attention they paid to each task. None of the relationships were statistically significant.

Seven political characteristics were examined, ranging from respondents' voting history to their ideology and candidate choice. Three of the variables were found to be significantly related in the initial analysis to voting accuracy, again at relatively weak levels: party affiliation (V=.12, p < .05), whether the person registered to vote this year (V=.15, p < .01), and choice of presidential candidate (V=.12, p < .05). Political independents, newly registered voters and those supporting Clinton appeared to be less likely to be accurate in reporting whether they voted.

Finally, four additional questions were examined to see if a person's overall view toward public opinion polling would be related to the accuracy of their self-reported vote. Respondents were asked to estimate whether most people lied to pollsters, if polls were inherently inaccurate, if polls have little influence and if they follow polls much. None of the indicators were significantly correlated with whether the respondent accurately reported their vote.

In summary, the initial data analysis suggested that five of the characteristics and attitudes most closely associated in the literature with high turnout -- non-minority group members, older voters, registered Republicans, not newly registered voters and those supporting a Republican candidate -- also were associated with accurate reporting of their activities on Election Day.

These five variables were then reexamined while controlling for any intervening impact of education, as shown in Table 3. This secondary analysis showed none of the relationships remained significant across the four education levels examined. Ironically, education by itself was not found to be significantly related to accuracy of responses on turnout in the initial analysis. But as an intervening variable, education explained much of the variance in accuracy, especially due to the tendency of those respondents with a high school education or less to vote at much lower levels than those with more schooling. Therefore, the initial significant relationships between characteristics and attitudes and a voter's accuracy proved to be spurious in the secondary analysis.

Discussion

This study suggests that several potential problems related to over-reporting of turnout may be less significant than expected. Differences between accurate and inaccurate respondents in terms of demographic characteristics, media use patterns and political characteristics were found to be non-significant or spurious. Even a respondent's feeling on whether people generally lie to pollsters did not have a significant relationship as to whether they then lied to the pollster in the context of this study.

Some earlier studies of vote over-reporting did find several variables were significant predictors of overstated turnout, including age[28], race[29], party affiliation and participation in earlier elections.[30] However, the results here are similar to other studies[31] that found no significant differences between accurate and non-accurate respondents in terms of self-reported voting behavior. The similarity between the two groups persisted even after this study examined two additional sets of independent variables: respondents' media exposure levels and attitudes toward polling.

The present results echoed the conclusion of Sigelman, who suggested "it seems safe to say that researchers who fit models of voting using self-reported rather than validated data would not be led very far astray in terms of what they conclude about the overall extent to which voting is related to demographic and political characteristics."[32]

While validated results would always be the preferred method of data analysis, the results of this study suggest that the high cost of the process and the quality of the validation itself should be weighed by the researcher. For this small Arizona study, it took about 100 hours and about $1,000 to contact all county boards of elections and validate the records of 639 registered voters.

This effort yielded only 41 individuals who inaccurately reported their vote, and their characteristics and attitudes were not significantly different than those respondents who did accurately report their vote. The high cost of the validation process, coupled with the need for news organizations to report poll results quickly, makes record validation checks on poll data less attractive.[33] In this study, the high cost of validation and the lack of significant differences between accurate and non-accurate respondents -- even on such issues as their media use or views toward polling -- offers additional evidence that the process may not be worth the effort.

Finally, the accuracy of the validated records themselves may not always be valid, further limiting the value of the checking process. Presser and Traugott warn "the standard against which responses are validated may itself contain errors. ... At least some of the record entries are probably in error, and mistakes may have been made in matching survey cases to record cases."[34]

So while the journalist and the academic continue to share a desire to maximize accuracy of polls, this study suggests one traditional method -- validating whether a respondent actually voted in an election -- does not yield enough significant information as to justify the effort. The lack of significant differences between respondents who told the truth and those who did not reduces any distortion caused by inclusion of both in a survey. The time and effort consumed by such validation checks might be better spent on the many other issues associated with maximizing the reliability and validity of polling.

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TABLE 1
Results of Validation Check of Voting Records

	% of all respondents	n
Accurate Respondents		
Reported did vote, Validated did vote	90.0%	487
Reported did not vote, Validated did not vote	2.4%	13
Inaccurate Respondents		
Reported did vote, Validated did not vote	7.2%	39
Reported did not vote, Validated did vote	0.4%	2
		n=541

TABLE 2
Characteristics of Accurate vs. Non-Accurate Respondents

	Accurate	Non-Accurate	Total	n	V*
1. Demographic Characteristic					
White	94%	6%	100%	490	.12##
Non-white	84%	16%	100%	70	
Age					
18-45	90%	10%	100%	460	.11#
45 +	95%	5%	100%	282	
Education					
≤ High school	90%	10%	100%	124	.05
Some college	94%	6%	100%	203	
College graduate	93%	7%	100%	139	
Post-graduate	91%	9%	100%	68	
Male	91%	9%	100%	214	.04
Female	93%	7%	100%	325	
Protestant	96%	4%	100%	183	.11
Catholic	90%	10%	100%	126	
Mormon	97%	3%	100%	37	
Other	90%	10%	100%	89	
No relig pref.	90%	10%	100%	90	
2. Media use characteristics					
Days/week watch evening news on TV					
0 days	92%	8%	100%	25	.09
1	93%	7%	100%	27	
2	85%	15%	100%	33	
3	93%	7%	100%	58	
4	90%	10%	100%	52	
5	91%	9%	100%	86	
6	94%	6%	100%	49	
7	94%	6%	100%	206	
Attention paid to TV cvg. of pres. campaign					
A great deal	92%	8%	100%	201	.05
Quite a bit	92%	8%	100%	147	
Some	94%	6%	100%	116	
Very little	91%	9%	100%	.43	
None	90%	10%	100%	.20	

	Accurate	Non-Accurate	Total	n	V*
Days/week read newspaper					
0 days	95%	5%	100%	42	.12
1	88%	12%	100%	41	
2	90%	10%	100%	38	
3	86%	14%	100%	42	
4	100%	0%	100%	23	
5	91%	9%	100%	44	
6	90%	10%	100%	29	
7	94%	6%	100%	271	
Attention paid to newsp. cvg. of pres. campaign					
A great deal	97%	3%	100%	141	.11
Quite a bit	90%	10%	100%	130	
Some	90%	10%	100%	134	
Very little	92%	8%	100%	67	
None	93%	7%	100%	43	
3. Political characteristics					
Republican	96%	4%	100%	254	.12#
Democrat	90%	10%	100%	231	
Other	85%	15%	100%	48	
Registered to vote this year					
Yes	86%	14%	100%	154	.15##
No	95%	5%	100%	376	
Presidential choice					
Bush	96%	4%	100%	199	.12#
Clinton	89%	11%	100%	194	
Perot	93%	7%	100%	99	
Voting frequency in past 10 years					
All elections	95%	5%	100%	302	.12
Half of election	90%	10%	100%	158	
Less than half	89%	11%	100%	45	
First time voted	84%	16%	100%	19	
Whether it was person's first time voting					
Yes	90%	10%	100%	29	.03
No	93%	7%	100%	487	

	Accurate	Non-Accurate	Total	n	V*
How closely respondent follows politics					
Extremely closely	94%	6%	100%	116	.13
Very closely	95%	6%	100%	206	
Somewhat closely	90%	10%	100%	174	
Not very close	93%	7%	100%	28	
Not closely at all	78%	22%	100%	11	
Conservative	94%	6%	100%	201	.09
Moderate	92%	8%	100%	254	
Liberal	87%	13%	100%	68	

4. Attitudes toward public opinion polling

	Accurate	Non-Accurate	Total	n	V*
Influence of polls					
no influence	93%	7%	100%	94	.06
some influence	94%	6%	100%	181	
a lot of influence	91%	9%	100%	165	
a great deal of infl.	96%	4%	100%	68	
Are people truthful in talking to pollsters					
never	83%	7%	100%	12	.10
seldom	90%	10%	100%	92	
most time	95%	5%	100%	313	
all time	89%	11%	100%	56	
How accurate are polls in the media					
extremely accurate	93%	7%	100%	14	.05
very accurate	96%	4%	100%	66	
generally accurate	92%	8%	100%	271	
not very accurate	93%	7%	100%	122	
not accurate at all	93%	7%	100%	15	
How much do you follow media polls					
frequently	96%	4%	100%	74	.05
often	92%	8%	100%	113	
seldom	92%	8%	100%	214	
never	93%	7%	100%	118	

Measure of association expressed by Cramer V
# p < .05
## p < .01

TABLE 3

Strength of Association, Respondent Characteristics Vs. Turnout Accuracy, Controlling for Education

	≤ High School		Some College		College Grad		Post Graduate	
	V	p	V	p	V	p	V	p
Race	.37	<.001	.03	>.05	.09	>.05	.16	<.001
Age	.22	<.05	.08	>.05	.07	>.05	.11	>.05
Party	.28	<.01	.09	>.05	.11	>.05	.10	>.05
Register this year	.09	>.05	.19	<.01	.16	>.05	.19	>.05
Presidential preference	.15	>.05	.10	>.05	.12	>.05	.10	>.05

Measure of association expressed by Cramer V.

Cultivation Theory Revisited: Another Look at the theory and Implications for Future Research

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Abstract

The purpose of this article is to attempt to clarify what cultivation theory is. To address this issue, a selective review of major criticisms of the theory will be carried out, with the question in mind of whether the original cultivation theory can withstand its criticisms. This article also attempts to provide some ideas that will advance the theory more fully.

Cultivation Theory Revisited: Another Look at the theory and Implications for Future Research

Research concerning television's influence on our perceptions and beliefs about social reality has often been guided by cultivation theory for more than two decades. (e.g., Gerbner, 1973; Gerbner & Gross, 1976; Gerbner, Gross, Morgan, & Signorielli, 1980, 1986, 1994; Hawkins & Pingree, 1980, 1981, 1990; Morgan & Shanahan, 1991, 1992; Potter, 1986, 1991a 1991b). Although many studies concerning cultivation theory deal with perceptions about violence and crime, the theory has also been applied to a wide variety of topics, including sex role stereotypes (Morgan, 1982; Signorielli, 1989), political orientations (Gerbner, Gross, Morgan, & Signorielli, 1982, 1984), beliefs about racial integration (Matabane, 1988), perceptions of attorneys (Pfau, Mullen, Deidrich, & Garrow, 1995), and images of America and Americans (Weimann, 1984; Tan, Li, & Simpson, 1986; Tan & Suarchavarat, 1988). Furthermore, research has demonstrated that the theory could be applied in countries other than the United States such as Argentina (Morgan & Shanahan, 1991), Taiwan (Morgan & Shanahan, 1992), Korea (Kang & Morgan, 1988), and England (Piepe, Charlton, & Morey, 1990).

Several researchers have questioned or challenged Gerbner et al.'s conceptual assumptions, methodologies, and findings. Although some studies basically follow the assumptions and analytical procedures employed by Gerbner et al. (e.g., Matabane, 1988), many of the "cultivation studies" focus on the revision of the original theory as formulated by Gerbner and his associates.

In a panel on cultivation analysis presented at the annual meeting of the International Communication Association in New Orleans (1988), Gerbner gave some advice to researchers investigating issues that they claimed were related to cultivation theory. There is apparently some discrepancy between Gerbner and his critics regarding what the theory of cultivation is. He told the researchers, "write your own theory and test its predictions, because the research you are conducting is not a test of cultivation theory" (cited in Tamborini & Choi, 1990, p.158). According to Tamborini and Choi (1990),

> in his advice to these investigators, Gerbner was not suggesting that their research was of no value in providing explanations of the media's impact on social perceptions, but only that it did not provide a test of cultivation. The processes of influence investigated were not those at work in cultivation, and the procedures used to make observations would not produce data that applied to the predictions set forth in cultivation theory (Tamborini & Choi, 1990, p. 158).

The purpose of this article is to attempt to clarify what cultivation theory is. To address this issue, a selective review of major criticisms of the theory will be carried out, with the question in mind of whether the original cultivation theory can withstand its criticisms. This article also attempts to provide some ideas that will advance the theory more fully.

What is Cultivation Theory?

Cultivation research has been part of a larger research project called the Cultural Indicators. The Cultural Indicators Project, one leg of which is cultivation analysis, adopts the holistic approach to the study of the mass media. The project includes a wide range of problems bearing on mass communication: (1) investigation into the formation of policies directing the massive flow of media messages; (2) rigorous and detailed content analysis of television drama; and (3) examination of the influences resulting from long-term exposure to the world of television. Gerbner and his associates' proposal can be thought of as a grand theory (Wober and Gunter, 1988). We must keep in mind that Gerbner et al.'s approach to the study of the mass media is a holistic one.

From the outset of the development of cultivation theory, Gerbner has asserted that the main function of television is social control, stability, and maintenance of the status quo. For example, Gerbner and Gross (1976) contended:

> television is the central cultural arm of American society. It is an agency of the established order and as such serves primarily to extend and maintain rather than to alter, threaten, or weaken conventional conceptions, beliefs, and behaviors....Television is a medium of the socialization of most people into standardized roles and behaviors. Its function is, in a word, enculturation. (p.175)

This view reflects Klapper's (1960) conclusion that the mass media's major effect is to reinforce the status quo. When Klapper articulated it, however, the media's function as a reinforcer of the status quo was not considered to be an important aspect of the media effects (Roberts & Maccoby, 1985). Gerbner and Gross took over this significant but largely ignored media's function as the main theme of their theory.

As implied in the above excerpt, the underlying orientation of cultivation theory is to examine the impact of long-term and cumulative exposure to TV on ideological social control. As Adoni and Mane (1984) pointed out, cultivation theory (and Cultural Indicators) can be regarded as "a potential meeting point for empirical research on media effects and the critical approach to cultural phenomena" (p. 335).

The core of the theory

In the discussion of a methodology of scientific research programs, Lakatos (1978) provided the distinction between the hard core and the protective belt of the scientific research program. According to him, a scientific theory consists of a hard core and its protective belt and "it is this protective belt of auxiliary hypotheses which has to bear the brunt of tests and get adjusted and re-adjusted, or even completely replaced, to defend the thus-hardened core" (p. 48).

What then is the hard core of cultivation theory? In my view, the core of the theory can be formulated as: (1) some aspects of the viewer's perceptions of social reality (subjective reality) reflect more symbolic reality as depicted on television than objective reality[1]; (2) this phenomenon is stronger among heavy viewers than among light viewers. Based upon these axioms, the theory postulates that the more time people spend watching television, the more likely it is that their perceptions of social reality will reflect what is seen on television.

The protective belt is formed around these core proposition and axioms. As is discussed later, the most criticized is the contention that the measure of total TV viewing should be used to test a hypothesis derived from the theory. According to Gerbner et al. (1986), the world of television on which cultivation theory should be based is "the most general system of messages, images, and values that underlie and cut across the widest variety of programs" (p. 20). They assume that (1) people watch television in a relatively nonselective fashion and (2) most heavy viewers tend to watch more of everything. As for nonselectivity, they have contended that most viewers watch television more by the clock than by the program. Gerbner and his colleagues also state that television provides relatively restricted program alternatives due to the fact that most of the programs are designed to attract as many viewers as possible, and thereby TV programs tend to be more or less similar in their makeup and content. Accordingly Gerbner and his colleagues maintain that overall viewing is an important theoretical construct and an empirical measure, and that idiosyncratic viewing patterns are less relevant.

"Mainstreaming" and "resonance" can also be regarded as auxiliary hypotheses that are parts of the protective belt of the theory. Mainstreaming means "the sharing of that commonality among heavy viewers in those demographic groups whose light viewers hold divergent views" (Gerbner et al., 1980, p. 15). In other words, this hypothesis posits that heavy consumption of television contributes to a homogenized view of the "real" world. Morgan (1990) explained its underlying reasoning as "people who spend great amounts of time watching television are likely to be exposed to a more centralized, consistent, standardized ideology and world view; hence, they should be more like each other than they are like the members of their groups who watch less" (p. 244). Resonance refers to the process that "when what people see on television is most congruent with everyday reality (or even perceived reality), the combination may result in a coherent and powerful 'double dose' of the television message and significantly boost cultivation" (Gerbner et al., 1980, p. 15).

The most basic concepts of the original formulation of cultivation theory are the world of television (symbolic reality) and viewer's perceptions of social reality (subjective reality). At the risk of oversimplification, the basic form of the original theory can be described as a two-construct model. Figure 1 shows the correspondence between the theory (conceptual level) and a hypothesis (observational level).

Insert Figure 1 about here

As previously mentioned, many of the cultivation studies dealt with televised violence and therefore this topic is used as an example. As for the hypothesis in Figure 1, rigorous and detailed content analysis of TV dramas reveals that the world of television is violent-saturated (Gerbner et al, 1977, 1978, 1980). It is hypothesized that the heavier exposure to such a crime-ridden TV world "cultivates" a misperception of the real world as a dangerous and fearful place. According to Gerbner et al., it can also be extrapolated that the scary world of television leads the audience to the view of interpersonal mistrust (so-called mean world syndrome). As is discussed later, the original theory does not posit a simple unidirectional causation from TV exposure to perceptions of social reality.

Criticism of the Original Theory

This section summarizes major criticisms of the original formulation of cultivation theory, keeping in mind Rosenberg's scheme (1968) on elaboration of the relationship between two variables. This article is, however, not an attempt of a comprehensive review of the literature. Rather, it focuses on some of the major theoretical critique (See Potter, 1995 for a review of the methodological critique).

Rosenberg (1968) provided a detailed explanation on the process of elaborating the relationship between two variables by introducing a third variable into the analysis. He stated, "Elaboration may thus properly be viewed as a sequence of steps" (p. 201). The steps suggested by Rosenberg are as follows: (1) determining whether the relationship is symmetrical, reciprocal, or asymmetrical; (2) determining whether the relationship is real or whether it is actually attributable to an extraneous variable; (3) examining component variables; (4) questing intervening variables; (5) searching for suppressor variables; (6) seeking antecedent variables; (7) considering conditional relationships.

Although Rosenberg considered these steps to be sequential, they are not necessarily decided upon exactly in this order. In particular, Rosenberg's steps 1 and 2 seem puzzling, because if once we determined a relationship is, say, asymmetrical, then it would sound strange to test whether or not the relationship is real. Hence the following review section starts with the step two, next goes back to the step one, then goes on to the step three, and so on.

Is the relation spurious?

One of the earliest and probably the most strident critic of cultivation theory may be Hirsch (1980, 1981b, 1981b). Gerbner and his associates (1981a, 1981b) responded to his criticism by refining the original theory. Morgan and Signorielli (1990) summarize the controversy between the Cultural Indicators research team and Hirsch as "[A]mong many other charges and countercharges, ...the major issues revolved around questions of spuriousness and controls" (p. 24). Reanalyzing the items on the National Opinion Research Center's General Social Survey (NORC GSS), which Gerbner et al. often used, Hirsch (1980) found "remarkably little support for the cultivation hypothesis," thereby concluding "acceptance of the cultivation hypothesis as anything more than an interesting but unsupported speculation is premature and unwarranted at this time" (p. 404).

For example, Hirsch recoded the amount of television viewing into more detailed categories. Separating out "nonviewers" (zero hours a day) and "extreme viewers" (8 hours or more a day) from the analysis and considering them separately, Hirsch claimed that nonviewers were more fearful than light viewers and that extreme viewers were less perturbed by violence than heavy viewers. He pointed out, "what small relationships there are between viewing and other variables are *nonlinear* wherever people who watch *no* television turn out to be more fearful, alienated, or anomic than those classified as light, medium, or heavy viewers. This finding is clearly counter to the cultivation hypothesis" (Hirsch, 1980, p. 419). Gerbner et al. (1981a, 1981b) responded to this criticism by arguing that the number of respondents in the categories of nonviewers and extreme viewers in the NORC data was very small and they might not be representative of the average viewers in these categories.

More serious was Hirsch's assertion that the relationship between television viewing and perceptions of social reality was spurious because simultaneous controls for a number of potential third variables diminished it to nonsignificance. Hughes (1980), using the same data set of NORC, reported results similar to Hirsch's.

While they admitted that the overall relationship was eliminated when a number of control variables were simultaneously held constant, Gerbner et al. asserted that "a conclusion of no overall relationship is of limited value because there may be (and often are) significant, meaningful, and nonspurious associations *within specific subgroups* [italics added]" (p. 42). They claimed that Hirsch ignored a number of subgroup variations, saying "While Hirsch was controlling for everything at once and finding no *overall* [italics in original] associations, we were paying closer attention to the 'exceptions'" (Gerbner et al., 1981a, p. 45).

Gerbner et al. maintained that one of two processes, mainstreaming and resonance, can explain the subgroup variations. According to Gerbner et al., the empirical evidence of the concept of mainstreaming can obliterate Hirsch's criticism.

As Condry (1989) correctly indicated, Hirsch was not saying that Gerbner et al. were completely wrong and that television had no effect on conceptions of social reality. Rather, Hirsch argued that the relationship between television viewing and beliefs about the reality was much more complex than Gerbner and his associates had described, and therefore they were not telling the whole story.

The controversy between Gerbner et al. and Hirsch has stimulated many mass media researchers in terms of "a wide-ranging consideration of theoretical and methodological issues important to anyone interested in understanding the effects of mass communication" (Roberts & Maccoby, 1985, p. 582). After Hirsch, several researchers conducted an extensive review of the literature and concluded that whereas the relationship is generally weak in strength, television viewing may have an nonspurious influence on *some* aspects of social reality, above all crime-related perceptions (Cook, Kendzierski, & Thomas, 1982; Hawkins &

Pingree, 1982; Ogles, 1987; Potter, 1993). Using the Rosenberg's term, the relation between television viewing and perceptions of social reality appear to have proved not to be symmetrical, although this conclusion may not be accepted unanimously by the research community. The next question is whether the relation is asymmetrical or reciprocal, in other words, what the causal direction is.

What is the direction of causal relations?

Although Hirsch's argument dealt with the details of Gerbner et al's cultivation analysis, Zillman and Wakshlag (1985) pointed out that it was incomplete in that his criticism focused too much on methodological issues, thereby failing to pay adequate attention to the issue of causation. They stated,

> His [Hirsch's] efforts concentrated on discrediting the relationship between heavy television consumption and fear of victimization, and it looks as though he would have granted proof of a causal connection if the relationship would have survived the statistical control of extraneous variables that are routinely applied in sociological survey research (Zillmann & Wakshlag, 1985, p. 142).

Most of the cultivation studies are correlational, and thus the direction of causation still remains unclear. There are three possible directional links between television viewing and perceptions of social reality: (1) TV viewing causes social reality construction; (2) perceptions of social reality direct TV viewing pattern; (3) TV viewing and social perceptions are mutually influenced. Many cultivation researchers think that Gerbner et al.'s studies implied that heavy exposure to televised crime and violence "causes" more TV biased perceptions of social reality (e.g., Zillmann and Wakshlag, 1985; Weaver and Wakshlag, 1986; Wober and Gunter, 1988).

These critics suggested a possibility of a reverse causation: viewer's beliefs about social reality might cause heavy viewing. Zillmann and Wakshlag (1985) criticized the Gerbner-Hirsch controversy for not considering this obvious alternative causal possibility. Similarly, Wober and Gunter (1988) pointed out that Gerbner et al.'s position on causation of cultivation analysis seems ambiguous and contradictory. According to them, the cultivation model "has failed to determine in what direction the relationship lies" (p. 46).

Zillmann and Wakshlag (1985) maintained that with regard to fear of victimization, it might be more relevant to think that fear causes heavy TV exposure rather than the latter causes the former. They derived this suggestion from the following argument.

While Zillmann and Wakshlag admitted that criminal victimization is rampant in TV dramas, they suggested that how television viewers interpret such violence-saturated programs should be re-examined. This is because if viewers perceive violence-laden crime TV dramas in the ways that content analysis reveals, i.e., the "mean and dangerous" world, it can only lead them to feel emotional distress, and if this is so why would viewers repeatedly expose themselves to such distressful dramas. Led by this question, they recognized that "television's crime drama *almost always features the triumph of justice* [italics original]" (Zillmann & Wakshlag, 1985, p. 148).

Instead of Gerbner et al.'s contention of the "mean and dangerous" world of television, they proposed the notion of the "just and safe" world as a possible viewers' interpretation. They pointed out,

> Transgressors are promptly caught and duly punished. Justice is restored after any wrongdoing. Society is continually freed from its dangerous elements. Rapists, murderers, kidnappers, drug pushers, and child molesters are expediently put away. (Zillmann & Wakshlag, 1985, p. 148)

According to them, such a safe and just world on television could motivate apprehensive citizens to expose themselves to more crime drama than those who have less fear about victimization by violent crime. This is their alternative explanation to the connection between heavy television viewing and fear of victimization.

How do Gerbner and his associates respond to this criticism? Morgan (1982) mentioned "from a cultivation perspective, the effects of television need not imply unidirectional causation; amount of television viewing and conceptions of reality may each have independent influences on the other" (p. 948). Likewise, Gerbner et al. (1986) stated "television neither simply creates nor reflects images, opinions, and beliefs. Rather, it is an integral aspect of a dynamic process....The question of which came first is misleading and irrelevant" (p. 23). Gerbner and his associates thus acknowledged that both of the two opposite causal relationships are possible.

With regards to the issue of causation, Hawkins and Pingree (1982) concluded in their extensive review of cultivation studies that:

> television can teach about social reality and that the relationship between viewing and social reality may be reciprocal. Television viewing causes a social reality to be constructed in a certain way, but this construction of social reality may also direct viewing behavior" (p. 239).

We must keep in mind that almost all kinds of media effects may be characterized as reciprocal or circular. It would be misleading to assume a unidirectional relationship between media exposure and perceptions, attitudes, and behaviors of the audience. Cultivation is no exception.

As shown in Figure 1, the relationship may be best described as reciprocal. That is, it could be possible that viewer's perceptions of social reality direct TV viewing behavior. Yet, Gerbner and his colleagues seem to put more emphasis on the other direction, that is, television's contribution to viewer's construction of social reality. In other words, Gerbner et al. would regard television's contribution as a "primal cause" on viewer's construction of social reality[2].

Message Uniformity---Component Variables

Gerbner and his associates have insisted that the message elements which lead to cultivation are those which cut across most programs and genres, and that audiences watch television in a relatively nonselective fashion. It follows that how much is viewed is far more important than what is viewed. Many researchers are, however, opposed to this assumption. Some researchers have observed that certain types of programs are more strongly associated with cultivation effects than total television viewing (e.g., Hawkins & Pingree, 1981; Weaver & Wakshlag, 1986; Potter & Chang, 1990). They argue that the overall amount of viewing is not the most relevant factor in explaining cultivation effects because cultivation relationships may be "content specific."

Hawkins and Pingree (1981) concluded that discarding the assumption of message uniformity and using the measure of exposure to specific genres serves to strengthen rather than weaken cultivation theory. In a similar vein, Potter (1991b) contended that the use of total viewing as the exposure measure might be one of the possible reason the cultivation studies show only a weak effect.

This type of criticism can be considered as examination of "component variables." Component variables refer to the decisive elements of a complex or global variable. Social class is an example of a global or broad category. According to Rosenberg (1968), education, income, occupation, etc., are all part or component of social class and "Until we know precisely which aspect, or aspects, of social class are of decisive significance, our knowledge is limited" (p. 41). Television viewing can be regarded as a kind of global variable and therefore those critics suggested that which components or elements of television viewing are crucial should be investigated.

Gerbner and his associates criticize these arguments for missing the point. They maintain that:

> Researchers who attribute findings to news viewing or preference for action programs and the like overlook the fact that most of those who watch more news or action programs watch more of all types of programs and that, in any case, many different types of programs manifest the same basic features (Gerbner et al., 1986, p.19).

Similarly, Morgan and Signorielli (1990), while admitting "some" heavy viewers watch TV selectively, contended that "most" heavy viewers watch more of everything, therefore idiosyncratic viewing patterns are less relevant, and overall viewing is an important theoretical construct and empirical measure.

How should we evaluate the pros and cons of using amount of overall television viewing as the most important empirical measure? It should be stressed that there is much truth in the argument that some components of television might have a stronger impact on a certain perceptions of social reality. But we must also notice the following facts. First, the traditional distinction between TV news and entertainment fares has been blurred recently, above all in the United States. Second, partly because of this fact, it is not as easy as usually expected to accurately estimate the amount of viewing of each different type of programs in a survey study. With this point, Neuman's (1991) argument deserves great attention:

> people do not separate the information and entertainment components of their habitual newspaper reading and broadcast use. It is true that people will answer questions about their relative interest in news and entertainment in polite response to a survey, but their responses probably reflect more their sense of what they perceive as socially acceptable than real distinctions associated with differences in behavior (p. 94).

The results of investigations into the content-specific nature of cultivation effects appear somewhat confusing. Their findings surely indicate that in many cases an exposure measure to a particular program type explains a cultivation effect better than the measure of total TV viewing. They do not necessarily, however, demonstrate the consistent tendency that might be expected. At any rate, this type of critique does not try to refute the theory. Rather, as Hawkins and Pingree (1981) point out, it may strengthen it by attempting to refine the original theory.

Psychological mechanisms---Intervening Variables

One of the weak points in cultivation theory lies in its lack of explanation of the underlying psychological mechanism. Condry (1989) pointed out that the theory does not present any explanations about what psychological processes lead viewers to construct their social reality in ways that reflect the television world.

However, some researchers have embarked on empirical investigation into the psychological processes (e.g., Hawkins, Pingree, & Adler, 1987; Potter, 1988, 1991b; Shapiro, 1991; Shrum & O'Guinn, 1993, Tapper, 1995). As Potter (1991b) contends, it is time "to get beyond the descriptions of whether an effect occurs or not and get into attempting to explain why and how those effects occur" (p. 100).

Hawkins and Pingree (1982) presented a model of cultivation based on social learning theory. Their model consists of two processes: learning and construction. In the learning process viewers acquire incidental information from television. Based upon the information acquired in the learning process, viewers construct their world-views in the second process (construction). Potter (1988, 1991b) extended Hawkins and Pingree's model into a more elaborate one. In their models, cultivation effects are "conceptualized to be related indirectly to viewing television exposure through *an intervening variable* of information about the television world [italics added]" (Potter, 1991b, p. 79). Although Hawkins et al.'s and Potter's psychological models appear to be reasonable, the empirical data do not necessarily provide evidence supporting their learning models.

Recently more cognitively oriented studies present different psychological models. Shapiro's (1991) study provides evidence supporting a mechanism of weighing and balancing memories' functions in the construction of social reality. Shrum and O'Guinn (1993) attempt to explain the cultivation effect in terms of viewer's heuristic processing (construct accessibility and the availability heuristic). Tapper (1995) also introduces a conceptual model from an information-processing perspective.

The psychologically oriented cultivation studies cited above are interesting attempts to address the issue of intervening variables in the cultivation processes. Future cultivation research needs to continue the investigation of a firm psychological grounding in order to make the theory more persuasive.

Audience Interpretation---A Suppresser Variable

There is a criticism that can be thought of as the quest for suppressor variables[3]. Some critics maintain that the cultivation perspective does not take into consideration any assessment of viewers' interpretations of TV content (e.g., Wober & Gunter, 1988). This criticism points out the possible discrepancy between the television world as revealed by content analysis and what viewers actually receive from television messages. The above-mentioned Zillmann and Wakshlag's (1985) suggestion of the possibility of the reverse causal order is apparently derived from the consideration of discrepancy between the world interpreted by the viewer and the world shown by content analysis.

Livingstone (1990b) criticized that cultivation theory tacitly adopts a passive conception of the viewer. She stated,

> His [Gerbner's] use of content analysis implies a theory of the text as containing given meanings, ... The role of the viewer is limited to the veridical perception of statistical frequencies and their connotative associations, as the hypothesis is that the more one views, the more one adopts the television reality. The viewer does not construct his or her own meanings, and has freedom only in the choice to a heavy or light viewer (p. 49).

Livingstone (1990a) presented an example of how meanings of a program could differ depending on viewers. By examining viewers' interpretations of a particular narrative from a British soap opera *Coronation Street,* she addressed the issue of whether the viewers fall into distinct interpretive positions. Livingstone contended that her findings argue for the concept of the "active viewer" and for inappropriateness of the view that there is "the" fixed meaning of a text or that the meanings are "in" the text[4]. Furthermore, Livingstone (1990b) pointed out that "if the same narrative cues two quite different interpretations, then the effects of viewing should also be different" (p. 176) and the reason low correlations were usually found in the cultivation studies may be because those studies tested only one interpretation. According to Livingstone, the audience's diverse interpretations of television narrative play the mediating role in television effects on viewer's social reality beliefs.

Livingstone's argument largely stems from a Cultural Studies perspective. The most important implication that the Cultural Studies perspective has for media effects research may be its re-conceptualization of audiences and messages. In many of the traditional media studies, audiences have been seen, implicitly or explicitly, as passive. On the other hand, the Cultural Studies theorists propose a different view of audiences and media messages. According to the Cultural Studies theorists, the meanings of television programs are more polysemic and more open than traditional media theorists have assumed. The meanings of a text are not given within the text itself. Therefore the meanings or interpretations of texts can differ depending upon viewers' backgrounds such as social class, gender, or sub-culture.

For example, Stuart Hall (1980), a leading scholar of British cultural studies, rejects the view of the text as fixed, given and independent of the context of reading. However, Hall does not regard the meanings of a text as infinite. According to Hall, the following distinctions as to readings of a text are possible: dominant, oppositional and negotiated readings. He argues that viewers whose social situation, above all their social class, align them comfortably with the dominant ideology produce dominant readings (or preferred readings) of a text. On the other hand, viewers whose social situation places them in opposition to the dominant ideology produce oppositional readings. However, the majority of viewers who accept the dominant ideology in general but modify it to meet the needs of their specific situation produce negotiated readings of the text[5].

Figure 2 illustrates the Hall's (or the interpretivists') model as applied to the media effects research. The limitations of this model, according to Fiske (1987), lie in its overemphasis of class in relation to other social factors and its implication that the three types of reading are roughly equal. In practice, there are very few perfectly dominant or purely oppositional readings, and consequently viewing television is typically a process of negotiation between the text and its variously socially situated readers.

Insert Figure 2 about here

While the idea of active viewers seems plausible and is empirically supported (e.g., Liebes, 1988; Livingstone, 1990a, b), it does not necessarily mean that the original cultivation perspective is inappropriate[6]. As previously explained, Gerbner's cultivation theory focuses on the most general system of television messages underlying the widest variety of programs rather than specific programs or characters. On the other hand, the critics examined viewers' diversity of interpretations of a "specific" narrative, which is apparently inconsistent with the cultivation perspective. For example, Livingstone (1990a, b) asked respondents about the detailed interpretations of a narrative. It is not surprising that viewers' interpretations or understandings about the details of the narrative are diverse. In addition, thinking about the details of a story or a narrative requires highly cognitive tasks, which do not seem to take place in the daily viewing behavior.

In the day-to-day media use, the amount of media exposure (above all, television) is substantial. As Neuman (1991) pointed out, however, "the psychological salience of any one element in this massive flow of information is correspondingly low" (p. 96). People are usually semiattentive to most of the media content. As opposed to experimental settings, including Livingstone's, media use in daily life is largely casual. The mass audience thus would be located "somewhere in the middle on a scale from passive to active" (Neuman, 1991, p. 97).

In sum, although Livingstone's argument is intriguing and it surely sheds some light on media effects studies, it is not necessarily appropriate for cultivation theory. As will be discussed later, Gerbner's and the interpretivist's theoretical models are not necessarily mutually exclusive, but rather complimentary in explaining various types of mass media impacts.

Viewing motivation---An Antecedent Variable

There is another line of criticism from a uses and gratifications perspective. Some critics claim that cultivation theory overlooks the importance of viewing motivations in the media effects. According to them, cultivation theory assumes that "all viewers bring the same motivations to, and receive similar gratifications from, the television viewing experience" (Carveth & Alexander , 1985, p. 261) or "all television viewing occurs because of the same motives" (Perse, 1986, p. 178).

Their arguments are mainly based upon Rubin's distinction between instrumental and ritualistic television viewing (Rubin, 1983, 1984). Ritualistic television use tends to "be habitual, frequent, and indicate a high regard for television as a *medium*" (Rubin, 1984, p. 75). He states that "the consequences of habitual/pass time/entertainment use of a communication medium, that is held in high regard, lie in sizable viewing levels with no obvious program preferences" (Rubin, 1983, p. 48). By contrast, instrumental viewing "appears to be purposeful, selective, and goal-directed, without being frequent or indicating a high regard for the importance of medium" (Rubin, 1984, p. 75) and it seeks out specific *content* of television.

Rubin (1984) maintained that because the originators of cultivation theory assumed that television viewing is ritualistic and non-selective, ritualistic viewing might "indicate greater potential impact of media messages simply because it goes hand-in-hand with more frequent media use" (p. 76). Based on Rubin's suggestion, Carveth and Alexander (1985) and Perse (1986) attempted to test their cultivation hypotheses that this less discriminant viewing pattern (ritualistic viewing) might lead more to cultivation effects. Both studies explored a possible influence of soap opera viewing on viewers' perceptions of social reality.

To investigate how viewing motives have an impact on the cultivation process, Carveth and Alexander (1985) attempted to test viewing motives as independent variables and contingent conditions. They hypothesized that "motivation, not exposure, is the variable which accounts for any cultivation effect. Thus, motivation would be related to cultivation regardless of the amount of viewing. Effects become a function of reasons for viewing, not viewing per se"

(p. 261). They also suggested a possibility of an interaction between exposure and viewing motives.

Although their data did not show the independent contribution of viewing motives to cultivation effects, Carveth and Alexander found the interaction: viewers whose ritualistic motives were higher showed greater cultivation effects. Accordingly, they concluded that "the incorporation of the interaction between viewing motives and exposure is established as a contingent condition for understanding the cultivation process" (Carveth & Alexander, 1985, p. 271).

In the study that attempted to replicate Carveth and Alexander's work, however, Perse (1986) found the opposite results. Contrary to Carveth and Alexander's findings, Perse demonstrated that instrumental viewing was more likely to be related to the cultivation effect.

It is certain that Carveth and Alexander's and Perse's studies made some contributions to the mass media effects research. However, they presented some puzzling arguments for the original theory. First, although the original cultivation theorists do not incorporate a perspective of viewing motivation into their theoretical formulation, it would be overinterpretation to say that the original theory assumes that all viewers watch TV with the same motives. Second, if viewing motivation, not amount of viewing, is the major variable which accounts for any media effect, it is obviously not a test of cultivation theory. Third, it seems more appropriate to deal with viewing motives as antecedent, not independent variables, because viewing motives might well precede viewing behaviors.

Perceived Reality---Contingent Conditions

One of the basic cultivation assumptions is that television drama is realistic and hiding its synthetic and functionally selective nature (Gerbner & Gross, 1976).

Some cultivation critics argue that the more viewers believe television to represent social reality accurately, the more they are likely to be influenced by television content. This factor is mainly dealt with as the viewer's perceived reality (Hawkins & Pingree, 1980; Perse, 1986; Potter, 1986, 1988; Rubin, Perse, & Taylor, 1988).

In their attempt to elaborate the cultivation hypothesis, Hawkins and Pingree (1980) first introduced the notion of perceived reality as an important conditional variable into cultivation analysis. Contrary to their hypothesis, those with higher perceived reality did not necessarily demonstrate stronger cultivation effects. However, they found a contingent relationship between exposure and cultivation perceptions when what they called the "Magic Window" dimension was used as a grouping variable.

Extending Hawkins' study (1977), Potter (1986) identified three dimensions on perceived reality: Magic Window, Instruction, and Identity. The Magic Window refers to the dimension that "the degree to which a viewer believes television content is an unaltered, accurate representation of actual life." The dimension of Instruction means "viewers' beliefs about television as an instructional aid which augments and expands their direct experience." And the dimension of Identity is "the degree of similarity the viewer perceives between television characters and situations and the people and situations experienced in real life" (Potter, 1986, pp. 162-163). According to Potter, viewers are different in the degree of belief about the reality of the TV world on these three dimensions. Potter (1986, 1988) found that the strength and direction of cultivation might be contingent upon the level of perceived reality.

It seems that theoretically perceived reality is a very important contingent variable and contributes to the refinement of the original theory. The studies cited above, however, do not show consistent results indicating that the higher the viewer's perceived reality is, the more he or she is likely to be influenced by the TV world. Empirical studies show only fragmentary results. Furthermore, the relationship between television viewing and perceived reality remains unclear: Do we watch programs because we see them as realistic or do we see programs as realistic because we watch them? As Elliott and Slater (1980) pointed out, the influence may be reciprocal: "viewing leads to perceived realism leading to greater viewing and so on"(p. 414). Clearly we need more work on this issue.

Levels of Television Messages

We can divide TV messages at least into three levels: program level, genre level and message system level. Figure 3 schematically represents the three levels of messages, which comprise a continuum from surface to deep structures. Level 1 (program level) can be defined as the level where each program's characteristics are most salient. Each program (or show) may have its own messages. For example, messages viewers receive from NYPD Blue may be different than those from Silk Stalkings, although both of them can be categorized as police/detective dramas. Level 2 (genre level) is the mid-level between surface and deep structures of television messages. Some messages may be similar within a genre, but different across genres. Level 3 (message system level) is the very one that Gerbner and his associates assert that cultivation theory should be based on.

Insert Figure 3 about here

The distinction of these three levels is important. Using this scheme, we can settle some of the criticisms. For example, the Livingstone's critique is based on the data derived from Level 1. Hence her argument, as previously pointed out, is not compelling enough to alter the original cultivation theory.

Greenberg (1988) also argued that Gerbner et al.'s cultivation model is incomplete. According to him, one or two particularly salient programs can have a dramatic effect on our perceptions of social reality. For example, he contended that "the portrayals of blacks on the Cosby Show may supersede or even overwhelm the black images derived from many other shows that have some blacks but in less distinguished, less interesting, and less positive characterizations" (Greenberg, 1988, p. 98). He called this as the "drench hypothesis." The cultivation and the drench hypotheses are, however, not mutually exclusive. This is because whereas Greenberg's argument focuses on Level 1, the original cultivation theory deals with Level 3. Depending upon aspects of perceptions of social reality, both hypotheses could shed light on some aspects of media effects.

The researchers who argue that cultivation effects are content specific attempt to demonstrate that the effect is more likely to take place in Level 2 than in Level 3. On the other hand, Gerbner et al. assert that cultivation should refer to the phenomenon at work in the deepest level (Level 3). Gerbner and his associates do not assume that all messages on TV are uniform, but they contend messages on which cultivation theory should be based are "the most general system of messages, images, and values that underlie and cut across the widest variety of programs" (p. 20).

Two questions arise. First, why do many studies demonstrate stronger effects for measures of genre level viewing than measures of total TV viewing? One reason might be that most of the cultivation measures (dependent variables) used in the previous studies deal with messages at Level 2, not at Level 3. The studies dealing with messages at Level 2 may be characterized as the extended version of cultivation theory. Previous evidence indicates that it could be more fruitful to extend the original theory into a more comprehensive one that deals with both Level 2 and Level 3.

Second, what is the kind of message that cut across a variety of programs and genres? Or is there indeed such a message? On this point, Potter (1990) provides interesting findings. He suggests that themes such as "truth wins out" and "hard work is rewarded" are the viewers' most general learning from television. These themes could be general system of messages in the TV world in the United States. Based upon comprehensive content analyses, we need to make an inventory about cultivation topics that distinguishes messages at Level 2 from messages at Level 3.

The differential impact of television

One of the issues frequently addressed in cultivation studies is the distinction between the cultivation of demographic (or first-order) beliefs and value system (or second-order) beliefs (Gerbner et al., 1986; Hawkins & Pingree, 1982, 1990; Potter, 1991a, 1993). The former refers to the beliefs of "various facts about the real world" that television teaches to viewers, and the latter means "extrapolations from those facts to more general images and orientations" and "the incorporation of the lessons into viewers' personal assumptions and expectations" (Gerbner et al., 1986, p. 27).

First-order cultivation measures require the frequency or probability estimation of real world events or facts (e.g., the number of violent crime per year), with which one can clearly distinguish a TV-biased answer from a real-world answer. As an example of first-order cultivation, Gerbner and his associates often used a question, "During any given week about how many people out of 100 are involved in some kind of violence in the U.S.? Would you say it is closer to about one person in 100 (the real world answer) or about ten people in 100 (the TV answer)?"

Second-order cultivation measures mean assessment of the viewer's generalized beliefs about social reality, which do not have any quantifiable referent in television content but that one can extrapolate from the television world (e.g., fear of walking alone at night or mistrusting strangers). The Mean World Index, which consists of three questions similar to Rosenberg's faith in people scale, is an example of the second order cultivation. Those questions in the index are "Do you think most people would try to take advantage of you if they got a chance, or would they try to be fair?," "Generally speaking, would you say that most people can be trusted, or that you can't be too careful in dealing with people?," and "Would you say that most of the time people try to be helpful, or that they are mostly just looking out for themselves?" Although TV-biased answers to these questions are not shown by the data of content analysis, Gerbner et al. identified, for example, "they are mostly just looking out for themselves" with the TV-biased answer. This answer is the one "extrapolated" from the television world.

Hawkins and Pingree (1990) contended that "the two types of beliefs seem to be independently influenced by viewed television content....correlations between television viewing and first-order beliefs seem to be more robust and less affected by third-variable controls than correlations for second-order beliefs" (p. 43-44). Potter (1993) argued that the two types of measures are different operationalizations of the same concept.

Closely related to this distinction is the argument of Zillman and Wakshlag (1985) and Sparks and Ogles (1990; Ogles & Sparks, 1989, 1993) that emphasized the important conceptual difference between *fear* of crime and *probability estimates* of criminal victimization. It seems that probability or frequency estimates of crime roughly correspond to first-order cultivation measures, and fear of crime corresponds to second-order beliefs. Sparks and Ogles (1990) found only weak correlations between measures of these two concepts, suggesting there is a conceptual distinction between the two. Based on this finding, they advised future cultivation researchers to use both of the measures of fear of victimization and probability estimates of criminal victimization in order not to make a false conclusion.

There is another kind of conceptual distinction suggested by cultivation researchers. Some investigators pointed out that television message could have an impact on societal level beliefs, but not on personal level ones. For example, Doob and MacDonald (1979) found that when the actual incidence of crime was held constant, the relationship between television viewing and personal level perceptions of being a criminal victim disappeared, but that between television viewing and societal level perceptions of crime situation did not. They concluded that "television may well act as a source of information with regard to questions of fact, whereas it does not change people's view of how afraid they should be" (p. 179). Tyler and Cook (1984) further examined this impersonal impact hypothesis of mass media across a variety of areas of risk judgment. Their experimental studies clearly demonstrated that (1) personal and societal level perceived risks are distinct and (2) the mass media have a greater impact primarily on the societal level, not on the personal level judgments. Like Doob and MacDonald, Tyler and Cook also concluded that "mass media reports often have an impact upon views about the seriousness of a problem as it affects society in general but not in altering views about personal risk" (p. 707).

As a matter of fact, Gerbner and his colleagues have acknowledged the differential impact of television on personal and societal level beliefs. Based on the results reported in 1981, they argued that "television may cultivate exaggerated notions of the prevalence of violence and risk out in the world, but the cultivation of expectations of personal victimization depends on the neighborhood of the viewer," and that personal level beliefs such as the likelihood of being a criminal victim "may be deflected by demographic or personal situations or other currents in the television mainstream" (Gerbner et al., 1986, p. 29). However, in discussing this point, Gerbner et al. were addressing the difference between the first- and second-order cultivation beliefs, and did not seem to be fully aware that this argument points to the distinction of personal and societal level (i.e., the impersonal impact hypothesis).

There exists one apparently important but never addressed issue pertaining to the above arguments: the relationship between the distinction of first-order (e.g, probability estimates of criminal violence) and second-order (e.g., fear of crime) beliefs and the distinction of personal and societal level beliefs. Are these two conceptual distinctions overlapping or different? They appear to be different. Table 1 summarizes the relationship between the distinction of personal and societal level beliefs and the distinction of first- and second-order beliefs. Taking into account both of the two distinctions, it turns out that we need to consider four conceptually different categories. The introduction of this two-dimensional analytical framework may shed further light on media's differential impacts on perceptions and beliefs of the audience.

Insert Table 1 about here

Cultivation researchers do not appear to be fully aware of the relationship between the above-mentioned two types of conceptual distinctions. For example, Doob and MacDonald (1979) confused fear of crime with estimates of likelihood of being victimized, although they discussed the importance of the distinction of personal and societal level perceptions. The question items they referred to as measures of "fear of crime" mostly consisted of "probability estimation" measures. Thus, when they claim that television does not affect personal level beliefs about crime, Doob and MacDonald's results support only one aspect of the impersonal impact hypothesis, namely perceived likelihood of being victims ((A) in Table 1), but not fear of crime ((B) in Table 1).

Sparks and Ogles (1990) found that heavy television viewing was significantly related to fear of criminal victimization, but not to estimates of the probability of being victimized. Because the items used by Sparks and Ogles assessed personal level risk judgments (i.e., dealing with (B) in Table 1), the results contradict the impersonal impact hypothesis. How should we interpret this seemingly contradictory result? Does this indicate the inappropriateness of the impersonal impact hypothesis?

Although their results lent support to the impersonal impact hypothesis, Tyler and Cook (1984) also provided theoretical underpinnings of possible conditions under which the mass media could have personal level impact. According to them, for example, the mass media might have both personal and societal level impact "when the media present a convincing case that a problem exists and when (a) the frequency of occurrence is high or (b) the individual identifies with the problem and sees its application to himself" (Tyler & Cook, 1984, p. 706). As numerous content analytical studies indicate (e.g., Gerbner et al., 1977, 1978, 1980), television frequently depicts violence and crime. Sparks and Ogles's results, therefore, seem to meet the first requirement suggested by Tyler and Cook. But it is hard to evaluate whether their results meet the next requirement. One of the Tyler and Cook's second criteria, namely whether the frequency of occurrence is high, is ambiguous. For example, do certain types of violent crimes occur frequently? To answer this question, we need to know "Compared to what?" We do not know whether the other criterion in the second requirement (i.e., the individual identifies with the problem and sees its application to himself) is met because Sparks and Ogles's study did not ask such a question.

At this stage, it is safe to say that the existing literature in this research area support the impersonal impact hypothesis if it deals with first-order (or probability) estimation. This is illustrated in the cells (A) and (C) in Table 1. However, in the level of second-order beliefs (e.g., fear of criminal victimization), we still don't have both convincing theoretical underpinning and enough supporting evidence. Furthermore, one of the four possible conceptually distinct categories, (D) in Table 1, has been largely ignored. No study has dealt with societal-level second-order cultivation beliefs. Future cultivation research should keep this two-dimensional analytical framework in mind, and attempt to identify which level(s) of conceptual categories their studies focus on.

Conclusion

After describing cultivation theory as formulated by Gerbner and his colleagues, this article carried out a selective review of its major criticisms. While some of the criticisms do little justice to the original cultivation theory, there are indeed insightful arguments which may contribute to the refinement of the theory. The original cultivation theory has been submerged in an ocean of anomalies. It was, however, not the core of the theory but the protective belt that has born the brunt of the criticisms. The original theory may have some theoretical and methodological aspects that should be refined, but the hard core of the original theory is still valid as it is. Refining some aspects of the protective belt, we may turn those criticisms into corroborating instances. Presenting the distinction of levels of television messages, this article attempted to articulate how the original theory can be expanded. Based upon the distinction between first-order and second-order cultivation and the distinction between societal level and personal level beliefs, this article also presented a two-dimensional analytical framework. This framework may contribute to the further development of cultivation theory.

Television's influence on socialization and enculturation is not easy to investigate because of its cumulative nature and many other factors contributing to these processes. Cultivation theory is a pioneering approach to this difficult task. At this stage, we should recognize that the original form of cultivation theory still needs to be refined. Thus we must continue the lively exchange of ideas among cultivation researchers so that we will be better able to probe the subtle but significant influence of television on our perceptions and beliefs.

Footnotes

[1] Applying Berger and Luckmann's (1966) theoretical framework to the study of mass communication, Adoni and Mane (1984) divided "reality" into three types: (1) objective social reality; (2) symbolic social reality; (3) subjective social reality. Objective social reality means "the objective world existing outside the individual and confronting him or her as facts" (p. 325). Symbolic social reality consists of "any form of symbolic expression of objective reality such as art, literature, or media contents" (p. 326). Subjective social reality refers to "where both the objective and the symbolic realities serve as an input for the construction of the individual's own subjective reality" (p. 326). The notion of subjective social reality is clearly similar to what Lippmann (1922) called "the pictures in our heads." It should be noted that Adoni and Mane emphasized that both objective and symbolic realities are fused into the individual's subjective reality.

[2] Concerning reciprocal relationships, Rosenberg (1968) stated as follows:

> The reciprocal type of relationship thus stands somewhere between the symmetrical and asymmetrical types. It is symmetrical in the sense that one cannot say which variable is cause and which effect, which independent and which dependent. At the same time it is asymmetrical in the sense that each variable is continuously affecting the other. In such cases, of course, one might speculate as to "primal cause" (p.9).

[3] Rosenberg (1968) explained the suppressor variable as:

> Although suppressor variables will usually be sought when there is an absence of relationship between two variables, one should always be aware of its possible relevance when a relationship does exist. Perhaps the observed relationship would be even stronger if the suppressor variable were controlled (p. 203)

Controlling on the suppressor variable thus has the effect of enhancing the size of the relationship between two variable.

[4] With regards to a text, Fiske (1987) explained the difference between a program and a text as "a program becomes a text at the moment of reading, that is, when its interaction with one of its many audiences activates some of the meanings/pleasures that it is capable of provoking" (p. 14). According to Fiske, *Dallas* is the same program whether it is broadcast in the U.S., in England, or in Japan. But it is a different text in the U.S., in England, and in Japan. It can even be, Fiske says, many different texts in the U.S. alone.

[5] Under the assumption that everyone does not necessarily understand the programs in the same way, Liebes and Katz (e.g., Liebes, 1988; Liebes & Katz, 1990) have studied how viewers from different cultures interpret texts (in their case Dallas) differently. For example, Liebes (1988) found correlations between cultural background and the choice of the forms ("linear," "segmented," and "thematic.") of retelling an episode of Dallas. Liebes explained that "The linear form describes a sequential story line, the segmented form dwells on the characters, and the thematic form focuses on messages, virtually ignoring events and characters" (p.280). According to her, the Arab and Moroccan groups specialized in linear retellings, the kibbutz and American groups offered segmented retellings, and the Russians preferred a thematic retelling. Liebes also pointed out that the linear retelling may correspond to Hall's preferred (or hegemonic) reading and the thematic retelling is more likely to accompany an oppositional reading.

[6] As for the relation between the active viewer (or reader) and texts, Livingstone (1990b) correctly points out that although it is a mistake to regard audiences as passive, mindless and homogeneous and see them as simple receivers or respondents, there is also a danger in adopting the opposite stance (namely, seeing people as initiators, constructors, creators of meaning). According to her, recent trends towards the active audience avoid the key problem of *negotiating meanings*, and it merely replaces one simplified view with another.

As Livingstone (1990b) argues, "if we see the media or life events as all-powerful creators of meaning, we neglect the role of audiences; if we see people as all-powerful creators of meaning, we neglect the structure of that which people interpret" (p. 23).

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Table 1

A two-dimensional analytical framework in cultivation theory

Dimension 2 (First- and second-order cultivation)	**Dimension 1 (impersonal impact hypothesis)** Personal Level	 Societal Level
First-Order Estimation (e.g., Probability or Likelihood of being victims)	(A) Media Effects (No)	(C) Media Effects (Yes)
Second-Order beliefs (e.g., Fear of Victimization)	(B) Media Effects (Yes)	(D) Media Effects (Unknown)

Figure 1

A Cultivation Model

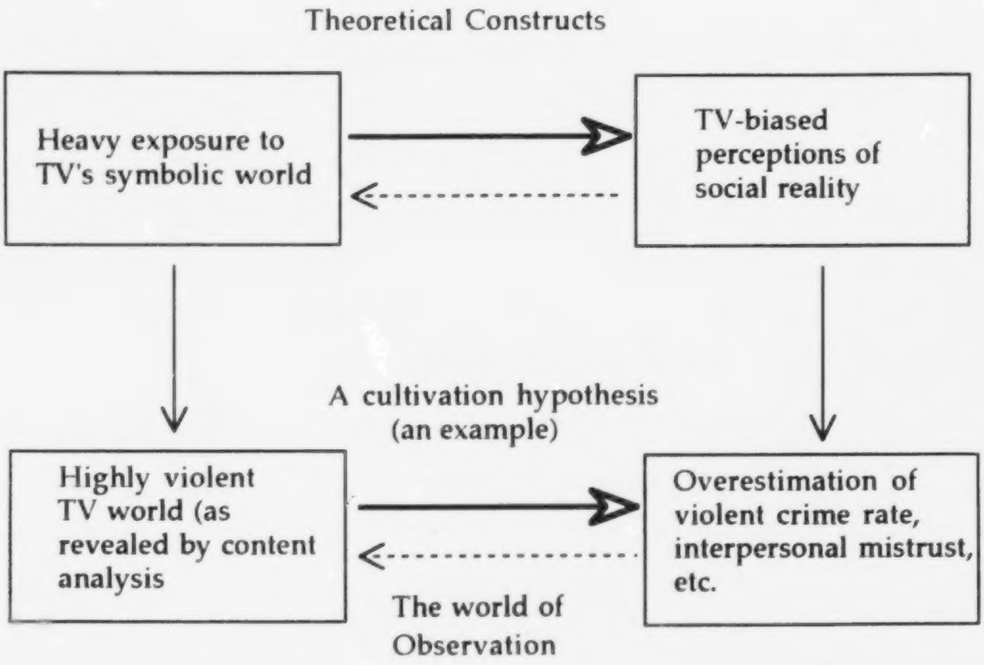

Theoretical Constructs
Heavy exposure to TV's symbolic world
TV-biased perceptions of social reality
A cultivation hypothesis (an example)
Highly violent TV world (as revealed by content analysis
Overestimation of violent crime rate, interpersonal mistrust, etc.
The world of Observation

Figure 2

Hall's model applied to media effects

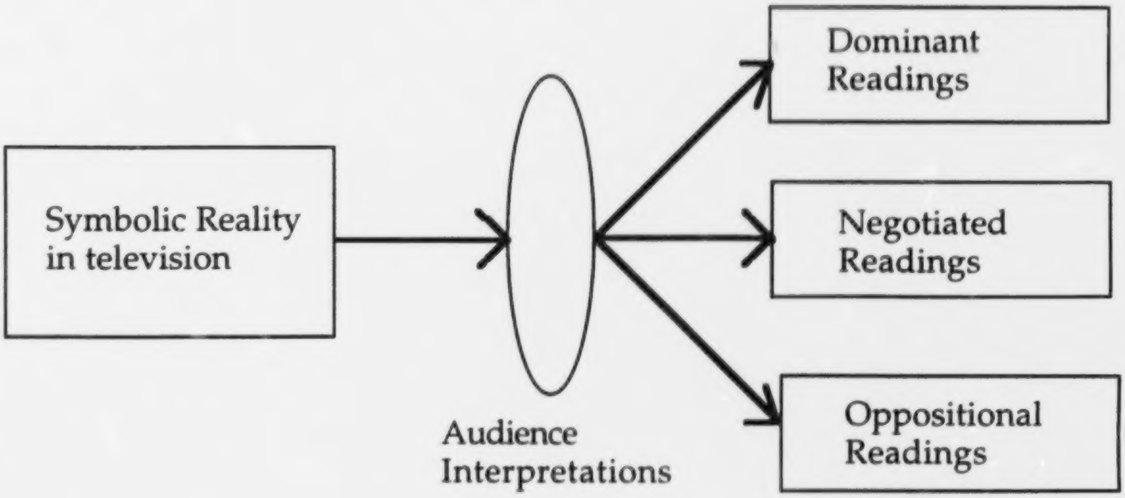
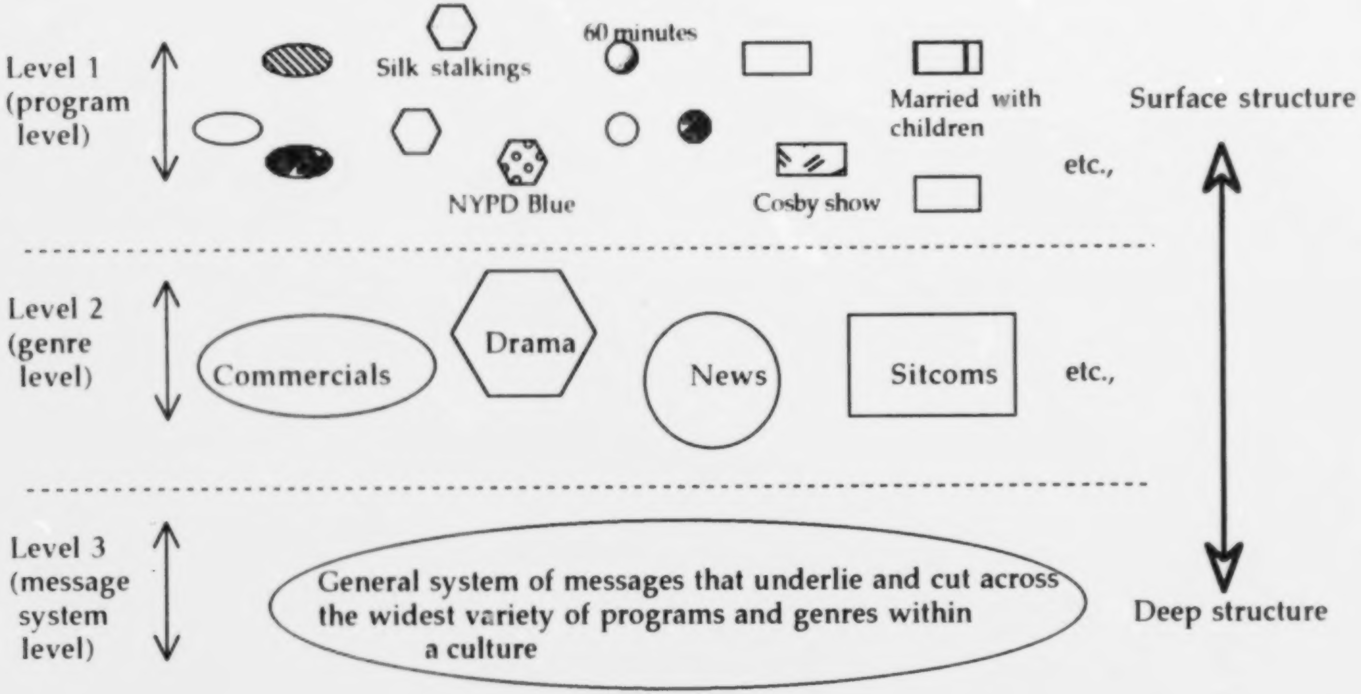


Figure 3

Different levels in conceptualization of television messages



Note: The small icons represent different programs

THE INFLUENCE OF SEVERITY, VULNERABILITY, AND RESPONSE EFFICACY ON INFORMATION SEEKING AND BEHAVIORAL INTENTION

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The influence of Severity, Vulnerability and Response Efficacy on Information Seeking and Behavioral Intention

Abstract

The purpose of this study was to explore Protection Motivation Theory (PMT) in the context of news reports about a hazard. Content elements of outcome severity, vulnerability and response efficacy were systematically varied in stories about a fabricated risk: fluorescent lighting lowering student academic performance.

Results from this laboratory experiment suggest that information about the severity of consequences results in greater information seeking about a hazard. In addition, information about vulnerability, severity and response efficacy jointly combined to produce higher levels of behavioral intention to take actions designed to avoid the hazard.

THE INFLUENCE OF SEVERITY, VULNERABILITY AND RESPONSE EFFICACY ON INFORMATION SEEKING AND BEHAVIORAL INTENTION

Introduction.

Reporting about environmental hazards is a predictable if not routine task faced by journalists. Nonetheless it is clear that people's reactions to this kind of story is anything but uniform. Responses to reports of environmental hazards range from deafening silence to expressions of outrage or even panic.

Examples of the behavioral "fallout" from these emotional responses abound: News about the chemical Alar applied on apples caused consumers to stop purchasing the fruit, thereby putting at risk financially pressed Washington State growers; reports about plans for a toxic waste-dump site often evoke the so-called a NIMBY response--"not in my back yard"--and its attendant social conflict; and flyers frequently cancel reservations or switch carriers after learning of a fatal airline crash. At least one researcher (Kasperson, 1992) proposes that this phenomenon, which he terms the social amplification (or attenuation) of risk, appears to be related to broad patterns of media coverage. Although it would be presumptuous to claim that information contained in media stories alone is responsible for such reactions, much about the process remains unknown. Exploring more fully the individual bases for these wider social phenomena is a worthwhile enterprise.

Moreso than social scientists, journalists have a longstanding interest in knowing the public's likely reaction to news about hazards. Among the rationales justifying press freedoms in the United States is the assumption that citizens use information they glean from news reports to engage in personal and collective action. For the journalist, the question of what elements in a news report, column, or editorial will most likely result in citizen action, or lack thereof, becomes a matter of both normative and practical concern.

The present paper attempts to elucidate aspects of news story content that might influence how audiences think, feel and behave when confronted with information about an environmental hazard. As a point of departure, we start with two basic questions: What prompts people to seek more information and what inspires them to change their behavior?

Risk communication researchers concerned with behavioral change have employed a variety of models, often borrowed from ancillary fields such as public health, cognitive and social psychology. Among these are the Health Belief Model (Becker, 1974), Expected Utility (Ronis, 1992), Theory of Planned Behavior (Ajzen, 1985), ACT-R (Anderson, 1990), Theory of Social Behavior (Triandis, 1980), Self Regulative Systems Model (Leventhal & Cameron, 1987) and Protection Motivation Theory (Rogers, 1983). Although these models share many elements in common, they differ in their choice of and emphasis on the principal variables used to explain people's responses to hazards. In addition, these models often differ in their accounts of the causal order and functional relationships among the explanatory variables employed.[1] In this report, we use one of the more successful and--from the viewpoint of message design--useful approaches, Protection Motivation Theory (PMT).

I. Protection Motivation Theory.

Protection Motivation Theory (Rogers, 1983; Prentice-Dunn & Rogers, 1986) posits that two underlying processes--threat and coping appraisal --undergird peoples' adoption of protective behaviors when faced with a threat or hazard. **Threat appraisal** is the process whereby a person evaluates the factors that increase or decrease the probability of enacting a maladaptive response. Maladaptive responses depend on the nature of a particular threat and may include: persisting in one's present behavior, failing to change one's behavior, or both. Factors tending to increase a maladaptive response are **extrinsic** rewards (e.g., social approval) and **intrinsic** rewards (e.g., bodily pleasure) associated with the behavior in question. Factors reducing the likelihood of a maladaptive response include the perceived **severity** of, and **vulnerability** to, the hazard. In this model, a fear response elicited by information about a hazard affects only perceived severity but has no direct effect on the eventual behavior enacted (Prentice-Dunn & Rogers, 1986: 154). The total threat appraisal is a simple algebraic sum of the above-mentioned variables.

The **coping appraisal** process consists of three simultaneous judgments: a belief about the **adequacy** (e.g., will something work?) of a preventive response (**response efficacy**), an assessment of one's **ability** (e.g., can I do this?) to successfully initiate and complete the adaptive response (**self efficacy**), and an estimate of the costs associated with particular course of action (**response costs**). Response and self efficacy increase the likelihood of an adaptive (i.e., coping) response, while response costs decrease the probability of an adequate reaction to a hazard; the relationship among these elements is thought to be linear and additive. Protection motivation itself is not observed directly but rather is an inferred mental state, indexed by behavioral intention, which itself is thought to be the best predictor of behavior (Ajzen, 1985; Kim & Hunter, 1993).

To summarize, Protection Motivation Theory has seven components: perceived severity of the threat, perceived vulnerability to the threat, intrinsic and extrinsic rewards for continuing one's present behavior, perceived efficacy of the response, one's ability to carry out the recommended action and the costs associated with undertaking a different course of action.

More recently, several researchers (Tanner, Hunt & Eppright, 1991) have proposed what they term an Ordered Protection Motivation (OPM) model, arguing that, rather than occurring simultaneously as the standard PMT model would suggest, threat appraisal precedes coping appraisal. While the data supporting this suggestion are not definitive, the upshot is increased research interest in the role of information seeking and knowledge holding as important variables contributing to both coping and response appraisal.

II. Research Hypotheses.

Behavioral Intention. Researchers have applied Protection Motivation Theory to predict behavioral intention using both experimental and survey methodologies across a plethora of circumstances, including: purchasing insurance (Beck, 1984), cigarette smoking (Maddox & Rogers, 1983), physical exercise (Stanley & Maddox, 1986; Fruin, Pratt & Owen, 1991), preventing nuclear war (Wolf, Gregory & Stephan, 1986), breast self-examinations (Rippetoe & Rogers, 1987), condom use (Tanner, Day & Crask, 1989; Tanner, Hunt & Eppright, 1991; Eppright, Tanner & Hunt, 1994), testicle self examinations (Steffen, 1990), nuclear disarmament activism (Axelrod & Newton, 1991), and safe-sex practices (Van der Velde & Van der Pligt, 1991).

A review of the above studies (See Appendix A for a detailed summary) shows that a simple additive or main effects model usually does not apply; second-and third-order interactions have been found in most research, but the form of the interactions and specific variables involved have varied greatly across studies. Indeed PMT's progenitors concede that the appraisal and coping processes are not independent of one another (Prentice-Dunn & Rogers, 1986)[2], a point that indirectly buttresses the theoretical argument that appraisal precedes coping. Faced with this set of circumstances, our recourse, if not to the theory, falls to logic for guidance. In essence, we appeal to the notion that contingent causation operates so that outcomes will be maximized when all contributory conditions are present. In other words, behavioral intention will be highest when all presumptive causes are at their highest level as well. Thus, we predict a three-way interaction among response efficacy, vulnerability and outcome severity, such that:

> H1: Response efficacy, perceived vulnerability and outcome severity will interact so that an expressed intention to modify behavior will be greatest for persons having knowledge about an adaptive response, perceiving themselves to be vulnerable to a threat and knowing that the resulting consequences are severe.

Information seeking. The introduction of information seeking as a variable of interest within the PMT framework raises the issue of its temporal and causal status. Certainly information seeking can be seen as an adaptive or coping response in its own right. On the other hand, information seeking can also be viewed as part of the appraisal process, occurring before any kind of coping response. The small number of studies treating information seeking as a variable suggest that self-efficacy (Beck & Feldman, 1983), general efficacy (response and self efficacy combined) and general threat (vulnerability and outcome severity combined) all play a role (Brouwers & Sorrentino, 1993; Srinivasan and Rachford, 1991; Rippetoe and Rogers, 1987; Eppright, Tanner & Hunt, 1994). In terms of the present study, one might reason that response efficacy as a form of knowledge would mediate the combined effects of outcome severity and vulnerability; that is, persons who are apprised of an effective remedial action will find it less necessary to continue to seek out alternatives. Likewise, one would expect a non-additive combined effect of vulnerability and outcome severity on information search. Thus:

> H2: Response efficacy, perceived vulnerability and outcome severity will interact when predicting information seeking such that the combined effects of vulnerability and outcome severity will be greatest for subjects unaware of the adequacy of a coping response.

III. Method

A. Subjects and design.

Research subjects were 206 students enrolled in introductory journalism and mass communication classes at a large Midwestern university; all received extra course credit for their participation. A 2x2x4 between subjects factorial design was used to evaluate the effects of the three manipulated variables on the dependent measures of interest. Two levels of Outcome Severity (high and low), two levels of Response Efficacy (present and absent), and four levels of Risk Level (high, medium high, medium low and low) were manipulated.

B. Procedures and Stimulus.

Subjects, meeting in groups ranging in size from two to 16, were assigned randomly to one of 16 experimental conditions. The study was presented as an attempt to assess reactions to using electronic versions of news stories issued by the university news service. Subjects were told that all of the stories were selected from the news service's archives. Each subject worked individually at a computer workstation.

After receiving verbal instructions, subjects viewed an on-screen menu listing six news stories created especially for the experiment. Three stories were of general interest to students (on effective time use, apartment hunting tips and a possible change in academic standards) and three stories were about hazards (a parasite in the campus water supply, an illness caused by chemically treated library books, and fluorescent lighting affecting grades). After selecting and reading the stories, subjects answered questions about each potential threat. Data from the fluorescent light story are the focus of this report.

The story indicated that researchers had found that ultraviolet radiation produced by fluorescent lights used in buildings on campus caused people who were experiencing stress while taking exams to have difficulty concentrating, thus lowering grades.

Subjects received different versions of the fluorescent light story consisting of (a) high or low outcome severity (loss of an entire grade per semester or the loss of one-half of one point), (b) an expert recommending the use of sunglasses as an effective response (present or absent), and (c) high, medium high, medium low, or low risk level (odds of one in seven, one in 60, one in 190 or one in 1300 of being affected).

At the end of the experimental session the subjects were debriefed as to the purpose of the study, apprised of the deception involved, and informed that the hazards mentioned in the experiment did not exist.

C. Dependent Measures.

Behavioral Intention. Behavioral intention was assessed by asking subjects to report the likelihood of their wearing sunglasses at some future date: "Considering your own circumstances and what you know about fluorescent lights on campus, how probable it that you will wear sunglasses while taking exams in the future?" Responses ranged from 0 (zero) "not at all probable" to 100 "definitely will". Only 39 percent of subjects indicated some willingness to change their behavior; a logarithmic transformation was used to normalize the distribution prior to analysis. Appendix B provides descriptive statistics of all variables used in this analysis.

Information seeking. Immediately after reading the story about the fluorescent light hazard, subjects were asked to indicate on a 9-point scale ranging from "not at all interested" to "very interested" the extent to which they wanted to receive more information about the fluorescent light hazard: "How interested would you be in obtaining more information about this topic?"

D. Other Measured Variables.

Fear. An additive index (alpha=.85) representing fear was created by combining subjects' responses to questions about the hazard (0-100 points): "How worried are you personally that fluorescent lights on campus will cause you to get lower grades?" and "How serious is the problem of fluorescent light lowering exam scores to you personally?"

Vulnerability. Subjects estimated the probability that the fluorescent light hazard applied to them. "Considering your own circumstances, how likely is it that you will be one of the persons affected by fluorescent light while taking exams? What are your chances of being affected? My own chances are: One chance in _______. Remember: The smaller the chance, the bigger the number." A logarithmic transformation was used to normalize the distribution prior to analysis.

Response Efficacy. Subjects were asked to rate (0-100) wearing sunglasses as a means of avoiding the light hazard: "Please rate how effective it would be for you to wear sunglasses while taking an exam as a way of avoiding the negative effects of fluorescent lights."

Response Costs. The cost associated with using sunglasses during exams was gauged by having subjects rate the magnitude (0-100 scale) on each of the following attributes: Inconvenience, expense, unpleasantness, disruption of daily life, difficulty, complexity, interference with usual habits, effort required, social embarrassment and extra time required. Principal components factor analysis revealed a single factor (Kaiser criterion) accounting for 52.2 percent of the variance and a scale using factor weights was used in subsequent analysis (alpha=.88).

Intrinsic/Extrinsic Rewards. In the case of the fluorescent light hazard, there is no maladaptive behavior associated with the lack of action, that is, wearing or not wearing sunglasses are two sides of the same coin. So we measured the intrinsic and extrinsic rewards and punishments associated with wearing sunglasses by asking subjects to rate (0-100) their personal and friend's **like** and **dislike** of wearing sunglasses. Factor analysis resulted in a single factor accounting for 52.0 percent of the variance and a factor-weighted scale was created (alpha=.65).

Other variables. Additional variables were measured and served where appropriate as statistical controls. These include: time spent reading the story, assessment of the story's believability, the certainty of the subject's behavioral intention (Lazarus & Smith, 1988, Price, 1989) and a subjects' self-efficacy rating of their ability to use sunglasses.[3]

E. Statistical Analysis.

Three-factor fixed effects ANOVA was used to examine the influence of outcome severity, response efficacy and vulnerability on subjects' desires to obtain more information about the hazard and their intention to use sunglasses while taking examinations in rooms with fluorescent lights. Analysis of covariance, correlational analysis and multiple regression was also used to elaborate the analysis and evaluate magnitude of effects.

IV. Results.

A. Manipulation checks.

Manipulation checks using 2 X 2 X 4 ANOVAs were run on subjects' estimates of perceived response efficacy, outcome severity and vulnerability. The response efficacy measure was significant, F (1,190)=7.67, p=.006; subjects exposed to information about sunglasses being an effective response to the hazard reported higher (M=35.49 Sd=35.79) levels of perceived efficacy than those subjects not exposed to this information(M=22.78, Sd=29.20).

Similarly, a significant main effect for the outcome severity manipulation was found, F(1,190)=24.64, p<.001. Subjects exposed to the high outcome severity condition registered higher levels of fear (M=84.48 Sd=61.81) than subjects in the low outcome severity condition (M=43.93, Sd=51.66).

And a significant main effect for the risk baserate manipulation also was found for vulnerability, F(3,190)=3.18, p=.025. A Duncan multiple range test revealed that the high risk baserate group (M=5.72, Sd=3.78) differed significantly from the low (M=7.47, Sd=2.92) and medium low (M=7.65, Sd=3.85) groups in their degree of perceived vulnerability to the fluorescent lighting hazard.[4] No other significant main effects or interactions were detected for any of the manipulation checks.[5]

B. Behavioral Intention.

It was hypothesized (H1) that the degree of behavioral intention to wear sunglasses in exam situations would be greatest for subjects who received information indicating that they had the most to lose, who were most likely to be susceptible, and who were aware of an effective solution. Analysis of variance revealed a main effect for outcome severity, F(1,190)=8.59, p=.004 and a significant three-way interaction among outcome severity, vulnerability and response efficacy, F(3,190)=2.94, p=.034.

Table 1 displays the cell means and reveals the hypothesized interaction: Subjects in the high-severity, high-vulnerability, high-response efficacy cell were most likely to signal their intention to modify their behavior. A Duncan multiple range test showed that this key cell was significantly different from other cells having a mean value of .77 or less. Response efficacy appears to play a key role, with the low efficacy condition accounting for seven of nine differences. Figure 1 displays the interaction in graphical form. Analysis of covariance suggests that this interaction is robust;

the interaction maintained its statistical significance when controlling for certainty, self-efficacy, story believability, time spent reading the story, perceived costs and perceived rewards of wearing sunglasses.

C. Information Seeking.

Earlier it was hypothesized (H2) that information seeking about the hazard would be highest for subjects who would be unaware of an effective response to the hazard yet exposed to information conveying a high degree of vulnerability and more severe negative consequences, that is, information seeking would be greatest in the high severity-high vulnerability-low response efficacy cell. A three-factor ANOVA was used to assess the effects of outcome severity-by-response efficacy-by-vulnerability on information seeking. A significant main effect for outcome severity was found, F(1,190)= 18.64, p<.001. Analysis of covariance, controlling for self-efficacy, story believability, time exposed to the story, perceived costs and perceived rewards for wearing sunglasses, revealed similar results. Thus the second hypothesis was disconfirmed. Rather than finding an expected interaction between vulnerability and outcome severity, only subjects in the high outcome severity condition (M=5.90, Sd=2.23) were more likely to indicate a desire for additional information about the hazard than those subjects in the low severity condition (M=4.61, Sd=1.98).

D. Additional Analysis.

The Protection Motivation Theory implies that several intervening constructs and exogenous variables also operate to produce effects. Regression analysis was used to understand their particular role and relative degree of influence. Before doing so, however, an examination of their intercorrelations is instructive. Table 2 shows very few, if any, surprises. Information seeking and behavioral intention show only modest overlap (r=.18), suggesting that these two constructs do indeed represent distinct stages in the overall protection motivation process. Perceived vulnerability, scaled so that a lower score indicates a greater perceived threat, is negatively related to information seeking. Fear is significantly associated with seeking information, behavioral change, vulnerability and response efficacy.[6] Response efficacy is positively correlated with intentions and self efficacy but demonstrates a negative relationship to perceived barriers. In other words, the more barriers one perceives, the less likely one believes that wearing sunglasses is an effective prevention strategy. The same relationship, only stronger, exists for self-efficacy and perceived barriers. The perception of barriers to action is correlated with fear and with information seeking, with this latter relationship suggesting that subjects may have been looking for alternate ameliorative measures that they could take. Not unexpectedly, response and self-efficacy are positively correlated, and self efficacy shows a positive relationship with intrinsic-extrinsic rewards for sunglass use. Interestingly, perceived rewards for sunglass use is unrelated to most other variables, the notable exception being information seeking. Here one sees that greater intrinsic-extrinsic reward is associated with lower information seeking.

Hierarchical multiple regression analysis was used to assess the absolute and relative effects of the experimental manipulations on both intervening variables and principle dependent variables.[7] The results, as summarized in Table 3, indicate that the experiment was best at manipulating fear (13 percent effect), followed by an eight percent effect for both perceived vulnerability and response efficacy. The table also shows the direct effect of each block of variables, first controlling for the influence of other variables used in this research report. Some five percent of the variance in subjects' information seeking is attributable to the experimental manipulations; for behavioral intention a six percent effect can be ascribed to the experiment.

V. Discussion and Conclusions.

The present study largely confirms particular hypotheses derived from the protection motivation literature; message effects were found for both information seeking and behavioral intention. And overall, the results suggest--on both theoretical and practical grounds--that Protection Motivation Theory can and will continue to serve risk communication researchers as a vehicle for conducting fruitful research.

To review, outcome severity, vulnerability and response efficacy had a non-additive effect on behavioral intention; the effect of these message elements was most pronounced when the risk from the hazard, outcome severity and response efficacy were at their highest levels. In this respect, the results provide solid support for the Protection Motivation approach.

Outcome severity directly influenced subjects' information seeking behavior--the more severe the consequences to a student's GPA, the greater was the desire to obtain more information about the hazard.

The finding that outcome severity influenced information seeking also has significance in light of Tanner, Hunt & Eppright's (1991) proposal that threat appraisal precedes coping appraisal. While our results are consistent with this view, given our research design they are anything but definitive. But it is interesting to note that questions about the **kind** of information sought could shed much light on the issue. For example, persons desiring information about how the hazard more precisely affects their particular circumstances may be seeking **diagnostic** information that links broad statistical patterns with their unique situation (Vorauer & Ross, 1993). Similarly, finding that persons are seeking more "how to" information would imply that they have moved beyond threat appraisal and are formulating a coping response. And at each "stage" one can well imagine persons seeking **normative** information about others' reactions and notions of an appropriate response to the threat itself, recommended actions, or action alternatives.

In terms of practical implications for message design, this study provides straightforward "rules of thumb" for the practicing journalist. News stories containing information about the severity of a hazard's effects can be expected to promote further information seeking. And reports containing three elements--level of risk, severity of consequences and the availability of effective actions--can be expected to generate the greatest change in peoples' intentions and actions.

Another aspect to note in this regard is that this study did not manipulate self-efficacy--a person's beliefs about his or her ability to perform successfully a particular preventive behavior. Now, in the present case, the amount of competence required to wear sunglasses may seem minimal for nearly everyone, but solutions and remedies to "real world" hazards may require a series of fairly complex steps. Providing information that allows people to assess their own abilities and to foster the development of their capabilities, and studying possible audience effects when this occurs, are worthy goals for journalists and social scientists alike. More generally, it is also worth noting that much of the work in this area has focused on **individual** strategies for change. No less important a topic to consider is peoples' sense of response and self-efficacy toward **collective** action.[8]

The effect size attributable to the experimental manipulations was on the order of five-to-six percent, a figure consistent with results from researchers manipulating similar variables (Griffin, Neuwirth & Dunwoody, 1995). While recognizing that the experimental situation maximized audience members' attention, even a five-to-one drop-off in efficiency still would represent fairly widespread effects on a mass scale. Of course, a large share of variance was unexplained as well, and this alone argues that researchers would do well to incorporate ideas from other models attempting to explain behavior (See Weinstein, 1993).

The point about the experimental situation maximizing attention can be extended as well, when one considers that the experimental stimulus materials consisted of news stories in text form. Text, of course, allows the reader the luxury of rereading. The use of tape recorders and VCRs aside, the ability to review information is not the typical case with radio or television. Because of this processing constraint, one suspects that judgments about hazards and resulting actions based thereupon are likely to be "distorted" by the characteristics of the channel being used. Thus the cognitive heuristics employed across mediated channels likely will be different (Nisbet & Ross, 1980).

Of course, the discussion so far assumes the equivalence of stimuli across channels. Qualitatively different stimuli likely will produce differential effects, and one could pose the questions such as: Is one five-second shot of a dying victim equivalent to **X** print mentions of symptoms? Journalists, using their intuition, likely would argue for the former over the latter. It's an empirical question, to be sure, but there is a broader issue at stake. Lay persons' intuition holds that there is a point where the commonly practiced journalistic technique of personalization crosses over to sensationalism. What leads to judgments of sensationalism in the context of reporting about hazards is an unanswered question. Clearly, such a judgment would imply that the inferences people draw and actions they take on the basis of press reports are "irrational"--out of proportion to what is at stake--and that some are harmed as a result. Such judgments imply that people use some kind of implicit criterion for judging human rationality, the study of which has and will continue to engage researchers for decades to come.

Endnotes

1. See Weinstein (1993) for a review of four of these models.

2. Weinstein (1983) also notes this difficulty.

3. The program controlling the presentation of stimulus materials recorded the time spent reading reach story. Believability was indexed by asking subjects to rate on a 9-point scale ranging from no doubt to complete doubt: "Please rate any doubts that you may have had about the accuracy of the story on fluorescent lights in classrooms lowering grades, while you were reading and thinking about it." Subjects' degree of certainty about behavioral intentions was rated as follows: "How certain are you about the answer you just gave? Please use any number between 0 (zero) percent and 100 percent where a 0 (zero) means "not at all certain" and 100 means "completely certain." Self-efficacy was assessed as follows: "Please rate you own ability to wear sunglasses while taking exams. Here 0 (zero) means not at all able and 100 means completely able to wear sunglasses while taking exams."

4. The scaling on the perceived vulnerability scale is such that a lower score indicates greater perceived risk.

5. ANOVAs also were run for the control variables used in the analysis. In only two instances were any significant main effects or interactions found: Subjects in the low outcome severity condition (M=5.31, Sd=2.20) registered the risk scenario (t=-1.95, p=.053) as more believable than did subjects in the high outcome severity condition (M=5.91, Sd=2.25). And a significant outcome severity by response efficacy interaction was found for self efficacy, F (1,190)=4.19, p=.042. A Duncan multiple range comparison of means revealed that subjects in the low outcome severity-high response efficacy cell (M=16.33, Sd=26.88) were significantly lower in perceived self efficacy than subjects in the high response efficacy-high outcome severity (M=30.49, Sd=35.12) and low response efficacy-low outcome severity (M=30.25, Sd=38.14) cells.

6. Griffin, Dunwoody, Zabala and Kamerick (1994) found that a related variable, worry about the hazard, correlated with seeking information about the hazard of cryptosporidium in local tap water.

7. Effects coding (Cohen & Cohen, 1975; Edwards, 1979) was used to represent the main effects and interactions of the manipulated variables. The effect size reflects the R-Squared for the experimental variables entered as a block **after** all other variables in the analysis were first entered.

8. See Lemert, Mitzman, Seither, Cook & Hackett (1977) for a discussion of mobilizing information.

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FIGURE 1. INFLUENCE OF OUTCOME SEVERITY, RESPONSE EFFICACY AND VULNERABILITY ON BEHAVIORAL INTENTION

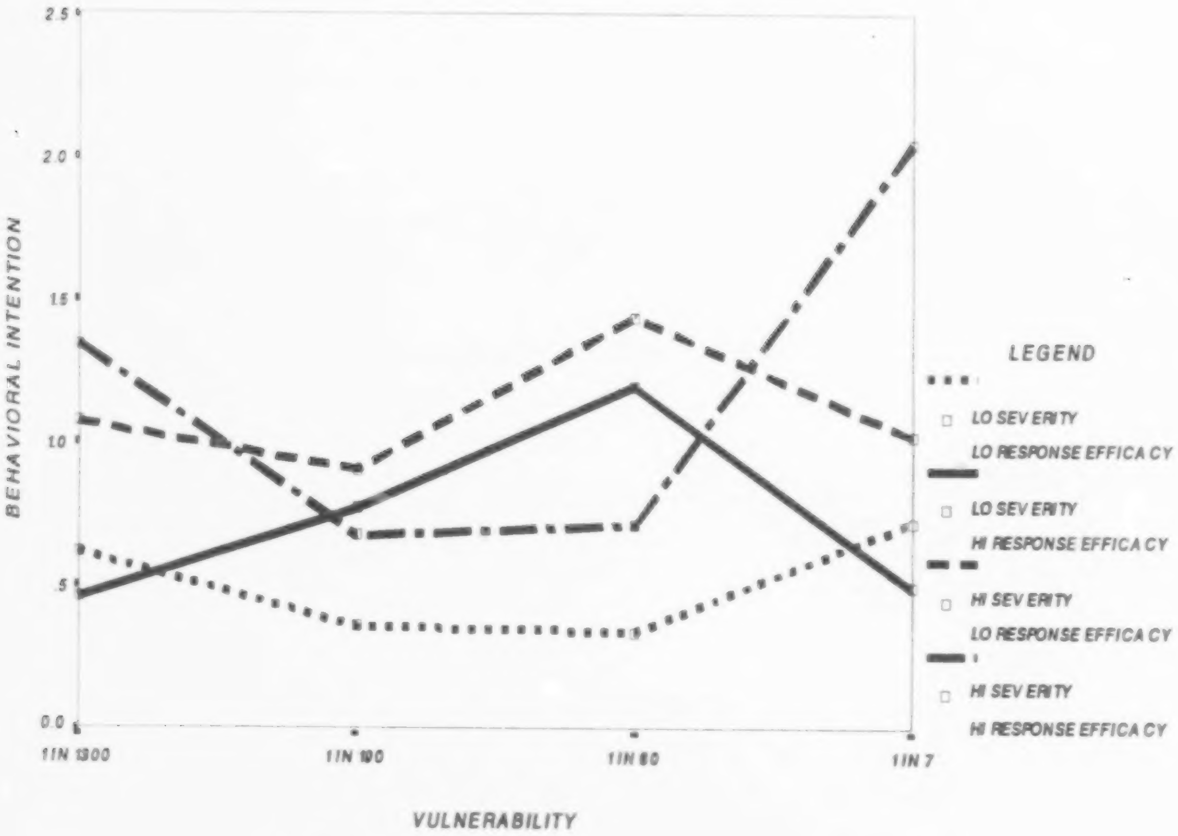

Table 1. Behavioral Intention by Outcome Severity by Response Efficacy by Vulnerability.

HIGH OUTCOME SEVERITY

	VULNERABILITY				
	1 in 1300	1 in 190	1 in 60	1 in 7	Total
High Response Efficacy	1.34	.67*	.71*	2.05++	1.19
Low Response Efficacy	.46*	.77*	1.19	.49*	.73

LOW OUTCOME SEVERITY

	VULNERABILITY				
	1 in 1300	1 in 190	1 in 60	1 in 7	Total
High Response Efficacy	1.07	.90	1.44	1.02	1.11
Low Response Efficacy	.62*	.36*	.36*	.72*	.51
Total	.86	.68	.92	1.07	.88

n=206. Cell entries are means. ++Cell is significantly different from cells marked with an asterisk (*).
*Cell is significantly different from cell marked with double plus (++).

Table 2. Correlations of select variables in analysis.

	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
Information Seeking (1)	---							
Behavioral Intention (2)	.18**	---						
Perceived Vulnerability (3)[a]	-.15*	-.11	---					
Perceived Fear (4)	.42***	.29***	-.44***	---				
Perceived Response Efficacy (5)	.11	.20**	.13	.23***	---			
Perceived Self Efficacy (6)	.04	.12	-.06	.07	.36***	---		
Perceived Barriers (7)	.15*	-.04	.07	.14*	-.20**	-.52***	---	
Intrinsic/Extrinsic Rewards (8)	-.11	.07	-.04	.00	.05	.20**	-.30***	---

n=205. Entries are Pearson correlation coefficients. *p<.05 **p<.01 ***p<.001

[a] Scaled so that a lower score implies a greater level of vulnerability.

Table 3. Decomposition of Effects in Experiment

	Intervening Variables		
	Fear	Vulnerability	Response Efficacy
Experimental Block	.13	.08	.08
Main Effects and Interactions			

	Dependent Variables	
	Information Seeking	Behavioral Intention
Baseline Control[a]	.02	.19
Time reading Believability Certainty		
Intervening Variables	.08	.06
Fear Vulnerability Response Efficacy		
Other Variables	.02	.01
Self Efficacy Perceived Barriers Intrinsic/Extrinsic Rewards		
Experimental Block	.05	.06
Main Effcts and Interactions		

Entries are R-squared for each block of variables, controlling for all other variables in the analysis.

[a] Block does not control for other variables in analysis.

APPENDIX A. Summary of research results

Study	Type	Independent Variables Used	Dependent Variable	Findings
Aspinwall et al., 1991	Survey	PROB, RE, SE, HIV Status Partner Status Barriers to change Behavioral Intention	Number of Sexual Partners	RE x HIV Status x Partner Status Ixn PROB x HIV Status x Partner Status Ixn SE x HIV Status X Partner Status Ixn
			Number of Anonymous Partners	PROB x HIV Status Ixn Barriers x Partner Status Ixn Age x Intention Ixn
Axelrod & Newton, 1991	Survey	PROB, SEV, RE, SE	Disarmist and Deterrentist Activity	PROB, SEV, SE positively related to activism
Beck, 1984	Experiment	PROB, SEV, RE, SE	Intention to purchase Insurance	Significant main effects for SEV & RE
Beck & Feldman, 1983	Survey	PROB, SEV, SE	Information Seeking	SE positively related to Information Seeking
Brouwers & Sorrentino, 1993	Experiment	Threat (PROB + SEV) Efficacy (RE + SE) Uncertainty	Information Seeking	Threat x Efficacy x Uncertainty Ixn
			Take Medical Test	Threat x Efficacy x Uncertainty Ixn
Fruin, Pratt & Owen, 1992	Experiment	SE, RE, Response Costs	Intention to Exercise	SE positively related to intention
Ho, 1992	Experiment	PROB, SEV, SE	Change Smoking Behavior	PROB x SE Ixn
Maddux & Rogers, 1983	Experiment	PROB, SEV, SE, RE	Intention to give up smoking	PROB x RE x SE Ixn
Ripetoe & Rogers, 1987	Experiment	SEV, SE, RE	Breast Self Exam Intentions, Coping responses (w/in Ss)	Main effect for SEV RE x Coping Ixn

APPENDIX A. Summary of research results (contd.)

Study	Type	Independent Variables Used	Dependent Variable	Findings
Srinivasan & Ratchford, 1991	Survey	Perceived Risk of Loss	Information search Activities	Indirect effect of Risk mediated through Perceived benefits
Stanley & Maddux, 1986	Experiment	RE, SE, Outcome Value	Attitude, Behavioral Intention Toward Exercise Program	Main effects for SE & RE
Steffen, 1990	Experiment	Prior Knowledge, Brochure (w/PROB, SEV, SE, RE info) about testicular self exams	Attitude Behavioral Intention Subjective Norm	Prior Knowledge x Brochure Ixn for Attitude behavioral intention and subjective norm
Tanner, Hunt & Eppright, 1991	Experiment	Threat, Coping response	Behavioral Intentions about sexual practices	Perceived severity of risk negatively related to maladaptive behaviors Fear positively related to a coping response
Tanner, Day & Crask, 1989	Experiment	PROB, SE	Behavioral Intention about condom use	Main effects for PROB, SE
Van der Velde & Van der Pligt, 1991	Survey	PROB, SEV, SE, RE	Behavioral intentions about safe sex	PROB, SEV, SE, RE all associated with behavioral intentions
Wolf, Gregory & Stephan, 1986	Survey	PROB, SEV, SE, RE	Behavioral Intentions about anti-nuclear war activities	PROB x SEV Ixn SE x RE Ixn

Legend: PROB=Probability of occurrence; SEV=Outcome Severity; SE=Self Efficacy; RE=Response Efficacy

APPENDIX B. Summary statistics of variables in analysis.

Dependent Variables	**Mean**	**Min.**	**Max.**	**Sd.**	**Skew**	**Kurtosis**
Information Seeking	5.25	1.00	9.00	2.20	.00	-.90
Likelihood of Wearing Sunglasses[a]	.88	0.00	4.62	1.33	1.31	.39
Intervening Variables						
Fear	63.52	0.00	200.00	60.13	.61	-1.02
Response Efficacy	29.14	0.00	100.00	33.20	.87	-.66
Self Efficacy	25.55	0.00	100.00	33.61	1.19	-.06
Perceived Odds[a]	6.90	1.10	18.42	3.57	.77	.87
Control Variables						
Certainty	85.69	0.00	100.00	26.29	-2.11	3.50
Believability	5.61	1.00	9.00	2.24	-.34	-.97
Perceived Barriers	.00	-3.08	1.66	1.00	-.58	-.42
Intrinsic/Extrinsic Rewards	.00	-3.08	1.55	1.00	-.72	.08
Time Reading Story	83.71	46.23	184.30	20.42	.94	2.24

[a] Log transformed

Cultivation and the Influence of Media in Public Opinion Homogenization

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ABSTRACT

Cultivation and the Influence of Media in Public Opinion Homogenization

Cultivation research posits a relationship between exposure to the mass media, especially television, and audience perceptions of reality. In particular, Gerbner and his colleagues hypothesize that heavy exposure to "typical" portrayals would pull people toward the middle, an effect known as "mainstreaming." Mainstreaming has been defined conceptually as a general process of relative homogenization, a convergence or absorption of divergent views as television overrides differences in perspectives and behavior that ordinarily stem from other factors and influences.

The purpose of this study is twofold: (1) to offer a confirmatory analysis of mainstreaming effects, using traditional ANOVAs to test for mean differences between low- and high-exposure viewers, and (2) to introduce a novel analysis used to discover variance shifts among exposure groups, as detected by the Levene test for homogeneity of variance. The latter is a unique analysis that articulates more precisely with the core conceptualization of "mainstreaming."

Study data were collected from an RDD survey of 302 residents of a major metropolitan area conducted via CATI during late 1993. Results showed that the phenomenon of mean shifting (or, valence shifting) as a result of increasing media exposure, and homogenization (variance reduction) resulting from increasing media exposure, are generally independent processes. Implications of study findings are discussed.

Introduction

Cultivation research suggests that the mass media, especially television, can influence the audience's world view (e.g., Infante, Rancer, & Womack, 1993). In particular, a causal relationship is posited between television viewing and perceptions of reality. Researchers (Gerbner, Gross, Morgan, & Signorielli, 1980) maintain that television is a primary influence on public perceptions of day-to-day norms and realities. Proponents of cultivation theory thus see television as a dramatic purveyor of cultural norms--subsuming a function that was once the realm of formal religion. In that regard, television has been portrayed as a primary transmission belt for culture. The study presented here attempts to assess the several ways in which the cultivation effect (and specifically, its mainstreaming function) has been tested, providing guidance for futures work in this area, and proposing a novel method of analysis.

When measuring cultivation effects, researchers have focused on the relationship between media use and measures purporting to distinguish "TV answers" from "reality." Specific attention has been paid to people's estimates of occupational distributions and vulnerability to crime. As Potter (1991) notes, the central premise of cultivation theory suggests that heavier viewers will be more likely to believe that the real world is like the one they see on TV.

Although cultivation theory has attracted a great deal of controversy over the years, numerous studies have found "wide support for cultivation" (Perse, Ferguson, & McLeod, 1994). "Evidence for this influence takes the form of correlations between television viewing and beliefs, such that heavy viewers hold beliefs about reality more in line with television presentations than do light viewers" (Hawkins, Pingree & Adler, 1987: 553-554). Central to this popular view is the assumption that TV exposure results in a shift in the valence of a belief or attitude.

While television is an important contributor to audience perceptions of the world around them, other print and electronic media also offer rich sources of media messages. Comparing attention to crime stories and people's perceptions, attitudes and behaviors regarding crime, O'Keefe and Reid-Nash (1987) found that greater attention to TV news was related to increased fear, concern and avoidance activity but no such effects were found for newspaper crime news attention.

Matabane (1988) studied cultivation effects among African-Americans. Given that nine of 12 programs starring blacks were presented in integrated, economically upscale settings, she expected that heavier viewers would report higher estimates of the prevalence of racial integration than light viewers. She found that heavier viewers were more likely to perceive racial integration as prevalent, that blacks were middle class and that whites and blacks are similar.

Gerbner and his colleagues (Gerbner, Gross, Morgan &

Signorielli, 1982) hypothesized that heavy exposure to these "typical" portrayals would pull people toward the middle, an effect known as "mainstreaming." Mainstreaming has been defined as a general process of relative homogenization, a convergence or absorption of divergent views as television overrides differences in perspectives and behavior that ordinarily stem from other factors and influences (Morgan & Signorielli, 1990, p. 22). Under this model, valence of attitude or belief is still important, but it is assumed that indicators for diverse groups will converge at high exposure.

In terms of social categories, then, heavy viewers would describe themselves as middle class rather than upper-middle or working class, or as moderate rather than conservative or liberal. Gerbner, Gross, Morgan, and Signorielli (1984) found support for that effect in their examination of nine data sets, concluding that TV cultivates moderate self-designations and a convergence on the political mainstream. Given that TV programming emphasizes young, male, middle class or affluent characters, while reinforcing dominant culture positions on political issues, the media are seen as perpetuating "mainstream" outlooks and values.

Evidence for this effect has also been collected in Britain, where Piepe, Charlton, and Morey (1990) found a relationship between heavy TV viewing and political centrism. In particular, heavier viewers were more likely to opt for centrist positions, placing themselves on the mid-point on a scale tapping attitudes toward health, education and welfare. These centrists were also more likely to name TV as their favorite source of political information and said they were more dependent upon TV during election campaigns. This effect was not uniform, however, as heavy viewers of current affairs were less likely to be in the center, measured by either self-placement or by attitude. Similarly, when measuring attitudes about sex roles and sex-appropriate behaviors for men and women, Morgan (1990) found evidence of mainstreaming in studies of four countries: Argentina, China, Korea, and the U.S.

Matabane's (1988) analysis of mainstreaming, mentioned earlier, found that heavy viewing made people from different backgrounds more similar in their perceptions of racial integration in the U.S. Thus, as Jeffres (1995, p. 9) notes, "traditional distinctions which flourished in the past are seen as becoming blurred as successive generations and groups become encultured into TV's version of the world."

Mainstreaming has also been found to pull disparate groups into a common community. Gurevitch and Kavoori (1992, p. 420) note that television offers "opportunities to open up the public sphere and to regenerate democracy." Thus, given Gerbner et al.'s (1986) contention that demographic "facts" learned from media provide the basis for a wider world view, we might expect that it pulls the public toward the norm on issues of the day.

Against this explanation, others (Hirsch, 1980) found that people who watched more TV actually experienced the reverse of what cultivation theory portends; in particular, heavier viewers were **less** fearful, alienated or anomic than nonviewers. Bridges, Harnish, and Korber's study of undergraduates found that heavier viewers scored no higher than moderate or light viewers on a series of scales measuring fear of crime, illness or violence. Similar cultivation "noneffects" were found in Great Britain (Wober, 1990).

The current study

To the extent that mainstreaming effects obtain, they tend to be located in those media for which diversity is minimized. Thus, specialized or "targeted" media such as radio, film, and magazines are less likely to produce a convergence of opinion. And, Perse, Ferguson, and McLeod (1994) noted that new media may be fragmenting that homogenizing effect. Their own findings suggest that cultivation effects were less among VCR owners. Given that network television's audience share has declined 35% since 1980, will mainstreaming effects go the way of the mass audience?

Clearly, television is a critical source of audience perceptions of the world around them, but it's not the only such source. In gaining a better understanding of cultivation dynamics, we examine mainstreaming effects for individual media and across media. Toward that end, we move beyond the relatively constrained set of dependent measures utilized in past work (e.g., beliefs about crime) and address a broad range of attitudes, values, beliefs and public opinion issues.

However, rather than simply comparing mean differences, we hope to bring cultivation methodology more closely in line with its conceptual underpinnings. If mainstreaming is to be envisioned as a process of "homogenization," it's appropriate to compare variances across distributions rather than measures of central tendency. Indeed, when using heavy viewers' perceptions to assess mainstreaming effects, we're faced with the problem of determining the normative population mean to which they should be compared. As Potter (1991) notes, the "TV answer" is difficult to determine, since viewer interpretations of TV are mediated by several contextual elements of portrayals. What's more, national public opinion data are not always available on a timely basis across the range of issues researchers might like to explore with regard to mainstreaming.

Even those particular studies that have attempted to examine homogeneity of response for those with high exposure, rather than a valence differential, have exclusively conducted analyses either via typical linear regression (possibly with controls; e.g., Perse et al., 1994), in which case heterogeneity of variance may in fact constitute a violation of test assumptions, or by segmentation by group (e.g., Matabane, 1988), testing whether group means converge as exposure rises.

We believe, however, that inspecting for heterogeneity of variance for all respondents across all levels of exposure may be more fruitful, and more in keeping with the spirit of the theory's original articulation. We may expect the variance of response to decrease with greater exposure, regardless of valence of response for those of highest exposure. Indeed, it is conceivable that both low- and high-exposure groups might hold the same mean value for a belief measure, yet differ significantly on their variance; mainstreaming may manifest as greater uniformity of response without changing the average response.

Potter (1993) seems to have come close to considering this issue, as demonstrated in his discussion of linearity and asymmetric relationships, noting that a cultivation correlation should be of equal strength across the range of the exposure variable. Our view, however, is quite the opposite. We contend that any correlational relationship that does exist between a belief and media exposure may well become stronger with increasing exposure (i.e., data points will cluster more tightly around a correlation line the higher one goes on the "exposure" axis).

By assessing homogeneity/heterogeneity of variance, we're able to obtain a more continuous gauge of TV's influence at different levels of exposure. Based on these measures, we can offer a confirmatory analysis of mainstreaming effects, drawing from the earlier-reviewed assumptions of cultivation theory. In particular,

H1: Heavier media users will be more similar in their opinions of current events than will light media users.

Focusing on cross-media dimensions of mainstreaming, research suggests that TV remains the primary general interest "mass" medium, while others (e.g., film) are becoming more targeted (e.g., Jeffres, 1994). Given Klapper's (1972) contention that media seeking to maximize audiences must, perforce, espouse a moderate tone, we assume that it offers the most mainstream of all media content diets. Moreover, since television is the most heavily patronized medium--serving as the public's primary source for news and entertainment--mainstreaming effects should apply across a wide range of issues. More formally,

H2: Mainstreaming effects will encompass a wider range of issues for television than for other media.

Methods

A survey of residents of a major metropolitan area was conducted via a CATI (computer-aided telephone interviewing) system during late 1993. The regional probability sample, using traditional random-digit dialing techniques, yielded a total n of 302 respondents. The survey was presented as a general poll about current issues, and contained items tapping respondents' opinions on a wide variety of topics. Interviewers were trained students completing a course on research methods.

Wordings for the 18 opinion items utilized in this analysis are presented in Appendix A. The 18 items comprise measures for both national and local current issues, with eight of the items on health issues specifically, and two items tapping attitudes toward potential controls over television violence. Generally, the items were belief-based current issues items, which one would expect to have been conveyed primarily via news media. In all cases, responses were measured on a 4-point Likert-type scale. Media exposure items were also included, tapping respondents' TV viewing (yesterday, in hours), radio listening (yesterday, in hours), days reading the newspaper (last week), time spent reading the newspaper (each day, in minutes), number of books read (last six months), number of movies seen at a theatre (last six months), and number of magazines read regularly.

Traditional mainstreaming analyses using one-way ANOVAs to test for mean differences between low- and high-exposure individuals were conducted in order to provide a baseline description and comparison with past research. Additionally, the novel analyses used to discover variance shifts involved the use of the Levene test for homogeneity of variance. A significant Levene statistic indicates that there exists substantial heterogeneity of variance--i.e., the dependent variable's variability is inconsistent across values of the independent variable. The statistic is obtained by performing a simple one-way ANOVA on the respondents' individual differences from (expected) mean values (Norusis, 1990). While a statistically significant Levene test is a necessary condition for support of our hypotheses, is it not sufficient; the test is insensitive to directionality. Variance values for low- and high-exposure respondents need to be examined in order to verify that high exposure is associated with greater homogenization of response to opinion measures.

Results

Table 1 presents the "standard" or typical analysis testing for mainstreaming effects. We see few significant differences between low- and high-exposure groups, barely beyond that expected by chance. Higher television exposure is associated with changes in belief valence for only five of the 18 dependent variables, even utilizing a liberal criterion of $p<.10$. In all five cases, significance is based on greater TV exposure's association with increased agreement with statements reflecting a societal change (e.g., "withdraw troops from Somalia," "more government controls over guns"). No other medium displays as many significant mean differences between low- and high-exposure groups. As noted earlier, the generally news-based nature of our 18 measures would lead us to expect that impacts will be maximized by exposure to media with a strong news component. Yet, newspaper exposure generates only a couple of significant differences, and magazine readership produces only one (a "chance-level" result).

Table 2 presents the results of the Levene tests conducted for the 18 opinion items, with standard deviations displayed for each item split into low- and high-exposure groups according to the seven media exposure indicators. Generally, across all seven media, we fail to find consistent support for H1: Heavier media users are not more similar in their opinions of current events than are light users.

For only one medium is there support for this homogenizing process--television. Five of the 18 measures show greater agreement among heavier viewers, while one item shows an increased variety of response with greater viewing ("I may lose my job"). Television does, generally, show the potential for homogenizing public opinion. We do not, however, see evidence of this type of mainstreaming effect for any other medium. In fact, exposure to movies generally shows greater *heterogenization* of opinion. Thus, some support is obtained for H2: Mainstreaming effects encompass a wider range of issues for television than for other media.

Table 3 allows a comparison of the Levene significances with significant results for the historically standard method of testing for mainstreaming, the basic ANOVA valence tests presented in Table 1. We may see that the two sets of significant findings have very little overlap, indicating substantial independence of the two processes of media impact. This confirms our expectation that media exposure may result in a valence shift, homogenization of opinion, neither, or both. Such a confirmation provides a powerful heuristic for future research in cultivation.

Discussion

The present study set out to rephrase the mainstreaming hypothesis by introducing an analytical technique that moves beyond summary measures of central tendency. The innovation of our approach is to examine whether heavy users of certain media are more homogeneous, i.e., whether the variance on a perceptual or attitudinal measure is reduced with increasing exposure. Our results point to important areas of consonance with as well as divergence from traditional mainstream analyses.

Mainstreaming says that attention to the mass media, and TV in particular, pulls people towards the middle. Although often used in a pejorative sense, the case can be made that mainstreaming should occur regardless of the values projected on TV or in the media. Indeed, if moderates, middle-of-the-roaders dominate society, then they also should seek out access as authoritative sources. Thus, they would be over-represented if the media were merely doing their job of trying to "represent" society.

Our results show that the phenomenon of mean shifting (or, valence shifting) as a result of increasing media exposure, and the occurrence of homogenization (variance reduction) as a result of increasing media exposure are generally independent processes. Table 3 shows a number of cases in which greater media exposure did correspond to a more consistent response, but the valence of that response did not vary with level of exposure.

These results will do little to settle the ongoing debate concerning the magnitude of cultivation effects. Our traditional one-way ANOVA indicators suggest that the valence-shift mainstreaming effect is actually quite weak. Even so, the fact that our homogeneity analyses uncovered additional relationships suggests that more subtle cultivation effects may be occurring, effects that may have gone undetected in past analyses. At the very least, the higher degree of sensitivity that the Levene's test shows toward mainstreaming effects reinforces the utility of our approach, and reinforces the need to carefully consider the context in which these public opinion dynamics are studied.

The most compelling testament to these contextual influences involves the different patterns of mainstreaming relationships occurring across different media. Interestingly, the most local of media did serve as sources of mainstreaming for perhaps the most local of issues--newspaper readership and radio listening were related to greater agreement on the quality of the job the local mayor is doing. Meanwhile, the most international issue (Somalia) was mainstreamed only via television.

That television generates the most powerful homogenizing impact seems to validate the special status ascribed to it in past cultivation work. Consistent with our expectations, television is in a separate class with regard to the pervasiveness of its influence and "mass audience" scope. For that reason, the major networks are continuing to offer "least common denominator" fare that generally bypasses controversy (e.g., Klapper, 1972) and attempts to maximize audiences by providing a moderate tone (e.g. Gerbner et al., 1980).

This reinforcing fare, then, provides a much stronger homogenizing influence than the targeted fare offered by other media (e.g., Newcomb, 1994). Film, by comparison, might take viewers to a different world, offering a harder-edged portrayal aimed at specific groups (e.g., the so-called "dead teenager" venue of horror/slasher films, the escapist world of the music-integrated musical; Gehring, 1988).

Recent trends toward audience fragmentation notwithstanding, television remains the singular most powerful vehicle for reaching a national audience. In this analysis certain specialized "targeted" media (e.g., movies, radio, magazines) actually show at least some evidence of a heterogenizing tendency corresponding to greater exposure.

It will be important, in later work, for researchers to strengthen conceptualizations and operationalizations of the link between audiences and the media. The strong explanatory role attributable to media modalities, in generating differential mainstreaming effects, reinforces the need to consider media environment factors with cultivation. Yet even the extensive set of traditional media examined here, in extending the scope of input sources, represents only a portion of the "media reality" to which people are exposed. In the absence of content analyses of all relevant media, we should at least verify the content structures (e.g., TV formats, film genre, radio programs, newspaper news categories) which are sought out by audiences, rather than making the naive assumption that all media content is alike.

Although the research approach introduced here was able to broaden our understanding of mainstreaming, uncertainties about future audience behaviors remain. In particular, the complex relations between audience members and their video technology environments (Heeter & Greenberg, 1988) will present a difficult challenge for later cultivation work. This is especially true now that technological freedom has "emancipated" audience members from the realm of interchangeable network fare, offering them a more active role as "TV users" with increased control over their video media environment (Levy, 1989). Technology itself is also forcing a reconceptualization of programming practices, as broadcasters scramble to secure a slot on the "information superhighway," where emerging digital technologies presage a "wire only" infrastructure delivered by the cable and telephone companies (Lin, 1994). As Jeffres (1978) predicted nearly two decades ago, a more diverse new media environment allows for greater "interest maximization," and therefore less forced homogenization.

Researchers will thus need to consider a wider realm of media use variables, as emerging media complicate the study of cultivation effects. Of course, as Ferguson et al. (1992) suggest, there may not always be a mainstreaming effect left to study. Over time, TV's homogenizing effect may abate as viewers treat it more like film, with audiences self-selecting a wider range of content. Television may, itself, respond by offering wider range of discourse, thereby reducing its centripetal pull on public opinion.

Further research should continue to focus on whether attention to TV and the other media increases the likelihood that someone shares the local/national consensus on a pertinent issue or perception. When a clearer understanding of these multiple media environments has been established, further work could more fruitfully explore specific mainstreaming effects.

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Table 1
One-Way ANOVAs with Two Levels of Media Use Variables

	H1 Pres. Health Plan	H2 Univ. Access	H3 Pick Own Dr.	H4 Cntrl Dr. Price	H5 Cntrl Hos. Price	H6 Cntr Drug Price	H7 Will Pay More	H8 Hlth Systm O.K.	Revoke JD Citzn.
TV Hours									
Low	2.73	3.30	3.50	3.37	3.44	3.45	2.77	1.71	2.07
High	2.86	3.41	3.61	3.37	3.51	3.54	2.85	1.88	2.05
F/Sig.	1.10	.87	1.37	.00	.44	.76	.40	1.95	.02
	n.s.	n.s.	n.s.	n.s.	n.s.	n.s.	n.s.	n.s.	n.s.
Paper Days									
Low	2.73	3.41	3.52	3.34	3.42	3.43	2.83	1.74	1.95
High	2.80	3.28	3.54	3.40	3.51	3.52	2.78	1.77	2.12
F/Sig.	.39	1.32	.04	.28	.87	.81	.12	.07	1.56
	n.s.	n.s.	n.s.	n.s.	n.s.	n.s.	n.s.	n.s.	n.s.
Radio Hours									
Low	2.74	3.33	3.55	3.35	3.45	3.48	2.82	1.72	2.07
High	2.86	3.36	3.51	3.44	3.54	3.52	2.76	1.85	2.07
F/Sig.	.91	.05	.18	.77	.95	.15	.19	1.23	.00
	n.s.	n.s.	n.s.	n.s.	n.s.	n.s.	n.s.	n.s.	n.s.
Paper Time									
Low	2.69	3.33	3.58	3.31	3.42	3.40	2.67	1.82	2.07
High	2.83	3.34	3.50	3.42	3.50	3.54	2.88	1.72	2.06
F/Sig.	1.28	.02	.71	1.08	.71	1.93	2.83	.77	.00
	n.s.	n.s.	n.s.	n.s.	n.s.	n.s.	p<10	n.s.	n.s.
No. Books									
Low	2.80	3.32	3.56	3.43	3.52	3.49	2.79	1.76	1.97
High	2.74	3.37	3.52	3.31	3.41	3.47	2.80	1.76	2.15
F/Sig.	.25	.25	.20	1.41	1.42	.02	.01	.00	1.90
	n.s.	n.s.	n.s.	n.s.	n.s.	n.s.	n.s.	n.s.	n.s.
No. Movies									
Low	2.74	3.30	3.53	3.36	3.46	3.49	2.79	1.85	1.95
High	2.82	3.37	3.56	3.38	3.46	3.46	2.79	1.65	2.21
F/Sig.	.51	.31	.16	.03	.00	.12	.00	3.04	3.40
	n.s.	n.s.	n.s.	n.s.	n.s.	n.s.	n.s.	p<08	p<07
No. Mags									
Low	2.75	3.31	3.51	3.41	3.46	3.45	2.76	1.78	2.08
High	2.79	3.36	3.58	3.33	3.47	3.51	2.82	1.74	2.05
F/Sig.	.11	.13	.61	.68	.01	.39	.23	.14	.04
	n.s.	n.s.	n.s.	n.s.	n.s.	n.s.	n.s.	n.s.	n.s.

Table 1, cont'd.
One-Way ANOVAs with Two Levels of Media Use Variables

	Wdraw Somalia troops	Mayor Doing Job	Care for Neigh	May Lose Job	Disc. No Prob.	Nets Cntrl TV vio	Gov Cntrl TV vio	Need Gun Cntrl	RRHF Help Image
TV Hours									
Low	2.99	3.29	3.01	1.73	1.69	3.06	2.02	3.26	3.01
High	3.37	3.30	3.27	2.09	1.71	3.23	2.19	3.56	3.20
F/Sig.	8.40	.01	5.52	5.32	.04	1.57	1.35	5.22	3.10
	p<01	n.s.	p<02	p<02	n.s.	n.s.	n.s.	p<02	p<08
Paper Days									
Low	3.15	3.25	3.15	2.05	1.72	3.23	2.19	3.37	3.16
High	3.07	3.32	3.05	1.69	1.69	3.02	2.00	3.36	3.01
F/Sig.	.43	.43	.91	5.88	.07	2.89	1.86	.02	2.20
	n.s.	n.s.	n.s.	p<02	n.s.	p<09	n.s.	n.s.	n.s.
Radio Hours									
Low	3.13	3.31	3.07	1.82	1.78	3.13	2.16	3.42	3.05
High	3.07	3.26	3.18	1.90	1.51	3.10	1.93	3.23	3.11
F/Sig.	.16	.23	.89	.30	5.62	.06	2.66	2.19	.29
	n.s.	n.s.	n.s.	n.s.	p<02	n.s.	n.s.	n.s.	n.s.
Paper Time									
Low	3.13	3.23	3.13	2.02	1.72	3.17	2.10	3.37	3.09
High	3.10	3.34	3.07	1.71	1.69	3.09	2.06	3.35	3.05
F/Sig.	.05	1.38	.32	4.64	.06	.43	.09	.01	.15
	n.s.	n.s.	n.s.	p<03	n.s.	n.s.	n.s.	n.s.	n.s.
No, Books									
Low	3.16	3.20	3.10	1.95	1.78	3.01	2.14	3.33	3.10
High	3.07	3.39	3.09	1.74	1.60	3.23	2.01	3.40	3.04
F/Sig.	.47	3.96	.03	2.09	3.08	3.12	.86	.32	.27
	n.s.	p<05	n.s.	n.s.	p<08	p<08	n.s.	n.s.	n.s.
No. Movies									
Low	3.17	3.30	3.15	1.82	1.75	3.14	2.20	3.26	3.00
High	3.04	3.28	3.04	1.88	1.65	3.12	1.96	3.48	3.12
F/Sig.	1.08	.08	1.02	.20	.79	.03	3.16	3.25	1.30
	n.s.	n.s.	n.s.	n.s.	n.s.	n.s.	p<08	p<08	n.s.
No. Mags									
Low	3.15	3.18	3.07	1.85	1.72	3.04	2.17	3.36	3.07
High	3.06	3.41	3.12	1.82	1.69	3.20	1.97	3.36	3.07
F/Sig.	.58	5.84	.22	.04	.08	1.46	2.06	.00	.00
	n.s.	p<02	n.s.	n.s.	n.s.	n.s.	n.s.	n.s.	n.s.

Table 2
Significant Levene Statistics for Homogeneity of Variance

Variable	SD for Low TV Hours Group	SD for High TV Hours Group	Levene Test	Sig.
H1: Pres. Health Plan	1.04	0.95	7.40	.007
H2: Univ. Access	1.02	0.99	2.75	.07
H7: Will Pay More	1.05	0.99	3.30	.07
Wdraw Somalia Troops	1.08	0.93	3.78	.05
May Lose Job	1.07	1.24	3.57	.06
Need Gun Cntrl	1.11	0.92	2.15	.05

Variable	SD for Low Paper Days Group	SD for High Paper Days Group	Levene Test	Sig.
Mayor Doing Job	0.84	0.74	3.81	.05

Variable	SD for Low Radio Hrs. Group	SD for High Radio Hrs. Group	Levene Test	Sig.
H2: Univ. Access	1.02	0.97	6.97	.009
H4: Cntrl Dr. Price	0.88	0.98	5.37	.02
Mayor Doing Job	0.79	0.75	3.62	.06
Need Gun Cntrl	0.99	1.18	4.94	.03

Variable	SD for Low Paper Time Group	SD for High Paper Time Group	Levene Test	Sig.
Mayor Doing Job	0.83	0.73	5.74	.02

Variable	SD for Low No. Books Group	SD for High No. Books Group	Levene Test	Sig.
H8: Hlth System O.K.	0.97	1.03	2.89	.09
Nets Cntrl TV Vio	1.14	1.03	6.69	.01

Variable	SD for Low No. Movies Group	SD for High No. Movies Group	Levene Test	Sig.
H8: Hlth System O.K.	1.04	0.93	4.75	.03
Revoke JD Citzn	1.10	1.20	5.46	.02
May Lose Job	1.11	1.17	2.66	.10
Nets Cntrl TV Vio	1.06	1.11	2.83	.09

Variable	SD for Low No. Mags. Group	SD for High No. Mags. Group	Levene Test	Sig.
Wdraw Somalia Troops	1.01	1.09	5.18	.02
Need Gun Cntrl	1.06	1.06	4.15	.04

Table 3
Significant Findings for ANOVAs and Levene Tests (p<.10)

	H1 Pres. Health Plan	H2 Univ. Access	H3 Pick Own Dr.	H4 Cntrl Dr. Price	H5 Cntrl Hos. Price	H6 Cntr Drug Price	H7 Will Pay More	H8 Hlth Systm O.K.	Revoke JD Citzn.
TV Hours									
Means	.	.	.	.	.	.	.	.	.
Variances	S^2 ↓	S^2 ↓	.	.	.	.	S^2 ↓	.	.
Paper Days									
Means	.	.	.	.	.	.	.	.	.
Variances	.	.	.	.	.	.	.	.	.
Radio Hours									
Means	.	.	.	.	.	.	.	.	.
Variances	.	S^2 ↓	.	S^2 ↑	.	.	.	.	.
Paper Time									
Means	.	.	.	.	.	.	M ↑	.	.
Variances	.	.	.	.	.	.	.	.	.
No. Books									
Means	.	.	.	.	.	.	.	.	.
Variances	.	.	.	.	.	.	.	.	S^2 ↑
No. Movies									
Means	.	.	.	.	.	.	.	M ↓	M ↑
Variances	.	.	.	.	.	.	.	S^2 ↓	S^2 ↑
No. Mags									
Means	.	.	.	.	.	.	.	.	.
Variances	.	.	.	.	.	.	.	.	.

M = Means significantly different for low- and high-exposure groups (↑=mean is higher for high-exposure group; ↓=mean is lower for high-exposure group)

S^2 = Significant Levene test, with variances different for low- and high-exposure groups (↑=variance is higher for high-exposure group; ↓=variance is lower for high-exposure group)

Table 3, cont'd.
Significant Findings for ANOVAs and Levene Tests ($p<.10$)

	Wdraw Somalia troops	Mayor Doing Job	Care for Neigh	May Lose Job	Disc. No Prob.	Nets Cntrl TV vio	Gov Cntrl TV vio	Need Gun Cntrl	RRHF Help Image
TV Hours									
Means	**M** ↑	·	**M** ↑	**M** ↑	·	·	·	**M** ↑	**M** ↑
Variances	S^2 ↓	·	·	S^2 ↑	·	·	·	S^2 ↓	·
Paper Days									
Means	·	·	·	**M** ↓	·	**M** ↓	·	·	·
Variances	·	S^2 ↓	·	·	·	·	·	·	·
Radio Hours									
Means	·	·	·	·	**M** ↓	·	·	·	·
Variances	·	S^2 ↓	·	·	·	·	·	S^2 ↑	·
Paper Time									
Means	·	·	·	**M** ↓	·	·	·	·	·
Variances	·	S^2 ↓	·	·	·	·	·	·	·
No. Books									
Means	·	**M** ↑	·	·	**M** ↓	**M** ↑	·	·	·
Variances	·	·	·	·	·	S^2 ↓	·	·	·
No. Movies									
Means	·	·	·	·	·	·	**M** ↓	**M** ↑	·
Variances	·	·	·	S^2 ↑	·	S^2 ↑	·	·	·
No. Mags									
Means	·	**M** ↑	·	·	·	·	·	·	·
Variances	S^2 ↑	·	·	·	·	·	·	S^2 ↓	·

M = Means significantly different for low- and high-exposure groups (↑=mean is higher for high-exposure group; ↓=mean is lower for high-exposure group)

S^2 = Significant Levene test, with variances different for low- and high-exposure groups (↑=variance is higher for high-exposure group; ↓=variance is lower for high-exposure group)

Appendix A

Public Opinions Items from Survey Instrument

Public Opinion Items for Opinion Survey, Fall 1993

Respondents were asked to use the following scale to show "how much you agree or disagree with each statement."

1-strongly disagree
2-somewhat disagree
3-somewhat agree
4-strongly agree

(Health 1: Pres. Health Plan) President Clinton's proposed health care plan should be approved by Congress. Do you strongly agree, somewhat agree, somewhat disagree or strongly disagree?

(Health 2: Univ. Access) The new plan should guarantee that everyone has access to health care, doctors and hospitals, regardless of their job or income.

(Health 3: Pick Own Dr.) The new health plan should guarantee people the right to select their own doctor.

(Health 4: Cntrl Dr. Price) The government should put some controls on prices doctors can charge.

(Health 5: Cntrl Hos. Price) The government should put some controls on prices hospitals can charge.

(Health 6: Cntrl Drug Price) The government should put some controls on prices that can be charged for drugs and prescriptions.

(Health 7: Will Pay More) I would be willing to pay more so everyone has health insurance or access to health care.

(Health 8: Hlth System O.K.) I think the current health system is fine and shouldn't be changed.

(Revoke JD Citzn.) The United States should revoke John Demjanjuk's citizenship and force him to leave the country if they find he failed to disclose background that he was a guard at a concentration camp during World War II.

(Wdraw Somalia Troops) The U.S. should withdraw its troops from Somalia immediately rather than waiting until next year.

(Mayor Doing Job) Michael White is doing a good job as mayor of Cleveland.

(Care for Neigh.) Local politicians should worry more about the neighborhoods and less about downtown development in Cleveland.

(May Lose Job) There is a good chance that I may lose my job in the coming year.

(Disc. No Problem) Discrimination against racial and ethnic minorities is no longer a major problem in America today.

(Nets Cntrl TV Vio) The networks should control the amount of violence in TV shows.

(Gov Cntrl TV Vio) The government should control the amount of violence in TV shows.

(Need Gun Cntrl) We need more government controls over who can purchase guns.

(RRHF Help Image) When the Rock and Roll Hall of Fame is completed, it will have a major impact on improving Cleveland's image.

Measuring the Ideological Center in Press Coverage of Election Campaigns

by

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Measuring the Ideological Center in Press Coverage of Election Campaigns

ABSTRACT

The Downsian model suggests that political parties in a bi-party system tend to stay in the middle of the political spectrum in order to win elections. Political scientists have been examining this hypothesis by measuring candidates' and voters' positions. Considering the increasing importance of the mass media in elections, the present study explored the media portrayal of candidates' "center-seeking" mechanism. This paper also discussed how to measure the center of the ideological spectrum.

Measuring the Ideological Center in Press Coverage of Election Campaigns

INTRODUCTION

In order to win in an election, it is important for the candidates to cater to the majority voices among the voters. A pragmatic strategy to do that, as suggested by Downs's center-seeking model (1957), is to stay in the middle-of-the-road or to be a so-called "centrist." Downs theorized that an average voter's ideological position fell in the center of the left-right continuum. As a result, centrist candidates would win. For decades political scientists have been examining this concept by developing a spatial model of voting. Basically those researchers (e.g., Page, 1978; Enelow & Hinich, 1981, 1982, 1984) compared voters' and candidates' positions on a spectrum of issues. Their studies indicated that candidates whose positions are closer to the voters are more likely to win.

With the increasing importance of the mass media as sources of political information, an additional aspect of the spatial theory deserves attention. If most voters essentially get all their information about the candidates through the mass media, whether the candidates are perceived as centrists or not should mainly depend on how the media shape and frame the candidates' positions. Candidates may have position papers available, but the information is not likely to reach the voters directly. In other words, the candidates' "real" positions may not matter as much as how they are portrayed by the media.

Thus, instead of focusing on the measurement of candidates' and voters' positions like political scientists did, the present study proposed a method to examine the media's portrayal of the center-seeking mechanism. To illustrate this method, this study analyzed press coverage of the candidates in several very recent high-profile races: five gubernatorial campaigns in 1994. Since this paper was to develop a method, the substance (or the result) was not the focus. Nevertheless, the results supported the center-seeking hypothesis, as a few political studies using other methods did.

LITERATURE REVIEW

Center-seeking Mechanism in Bi-partisan Politics

There is a gap between the ideal of democracy and practice. Democracy necessitates compromise to reach an agreement. However, the bi-partisan nature of U.S. democracy contradictorily suggests that there are at least two political groups that differ in fundamental ways such as ideologies and public policies. Converse (1988/89) suggested that, in resolving this dilemma, candidates of the two parties may simply resort to seeking the middle ground. In short, candidates who endeavored to win, he stated, were likely to subject themselves to the center-seeking mechanism.

Hotelling (1929) used the analogy of two competing merchants corresponding to the Democratic and Republican parties to capture the essence of the center-seeking hypothesis. He argued that both merchants would prefer to open their stores in a place where the greatest number of potential buyers were located. Only by locating the store as close as possible to the center of the "Main Street," where most people shop, could one merchant be sure that the competitor would not lure away more than half of the customers (Hotelling, 1929; Downs, 1957; Page, 1978). In other words, it is necessary for political parties to stay in the center of the liberal-conservative continuum in order to win the voters.

Downs (1957) elaborated on this political analogy and pioneered the center-seeking mechanism hypothesis. One of his economic models of democracy conceptualized that the distribution of public (voters') opinion on issues and policies resembles a uni-modal or bell-shaped distribution. (See Figure I.) This suggests that the majority of voters center around the middle of issue or policy stands. Therefore, both parties would compete for the center to maximize votes. This center-seeking idea is based on an assumption that people vote for candidates whose ideological positions are closest to their own. Theories of people making vote decisions are discussed next.

Political Ideology as a Reference for Voting Choice

Political ideology is defined a set of "fundamental beliefs or principles" concerning the goals of political or governmental action as well as the "proper procedure" for making governmental decisions (Flanigan & Zingale, 1991: 102). Candidates' positions on the political ideological spectrum is highly related to their decision-making processes or public policies. Political parties use ideology to "remind voters about their views of the good society and how to achieve it," which helps voters to "evaluate the implications of the party's approach" (Popkin, 1994: 52). Therefore, political ideology has long played an important role in election campaigns.

According to a prospective-policy-choice approach of voting theory, voters base their choice on their perceptions of what candidate policy preferences will be if elected (Joslyn, 1984). A similar "proximity voting" hypothesis suggests that people vote for the candidate or party "whose position is nearest to theirs" (Popkin, 1994: 61). As a result, before making choices, voters are interested in what an elected candidate would do after taking office (Joslyn, 1986). The ideological position of the candidate here is considered as his or her "average" ideological position on different issues that the majority of voters find important.

Analyzing candidates' positions on issues, Page (1978) noted that they tend to be consistent over time. Thus, even if a candidate's stance on a certain issue is reported infrequently by the media, voters may still be able to correctly perceive the ideology of the candidate. In this way, media's portrayal of candidate's political ideology offers a good frame of reference or an information "short-cut" to help voters make decisions.

By no means can candidates convey a detailed list of their stands on a variety of issues to the voters. Also, voters may not have the ability, time, or interest to comprehend such a list. Nevertheless, voters may use ideological labels to forecast which policy positions a candidate will adopt if elected (Converse, 1964; Hinich & Pollard, 1981; Popkin, 1994). Stimson's study (1984) did provide evidence that voters with a greater ability of ideological conceptualization had a higher issue constraint. In other words, voters' stands on most issues were highly correlated with the self-rating of liberal-conservative positions. Candidates certainly are likely to have high issue constraint. Therefore, their positions on few issues should be good indicators of their stands on other issues in the political spectrum. As a result, it is easy for voters to predict candidates' future policies if elected.

Studies Testing the Center-seeking Hypothesis

It is not easy to summarize Downs' theories and models (1957). For example, he developed models of various political systems (e.g., multi-party systems). He also changed these models by adding new assumptions and variables, such as voters' alienation when two parties are identical on some stance. For the purpose of this study, only one model (see Figure I) that demonstrated the basis of his theory was chosen.[1] This was an adequate choice because it matches the shape of the distribution of public opinion in reality (see Figure II).

Downs' work appeared to have a great impact. Many scholars developed mathematical formulae to explain and expand on Downs' simplistic unidimentional models (e.g., Shepsle, 1972; Davis & Hinich, 1966; Davis, Hinich & Ordeshook, 1970; Hinich & Pollard, 1981; Enelow & Hinich, 1981, 1982, 1984; Hinich and Munger, 1994).

For instance, Hinich and his co-authors developed multi-dimentional or spatial models. They added different assumptions and variables to these models (such as additional issue dimensions, voters' alienation and their ability to recognize all campaign issues). As Page (1978) put it, these theoretical studies are problematic because they commit themselves to assumptions, which results in "letting the theory stand or fall in terms of its predictive power." These authors intended their theories to apply "only when those assumptions are met."

The following paragraph is a good example of what Page (1978) meant by their heavy dependence on assumptions (Enelow & Hinich, 1984: 463).

> Letting A_i be the n x n positive definite matrix of salience weights describing the relative importances of the n issues to voter i and the way in which trade-offs are made between these issues, the distance between i and the Theta is ...., where.... Voter i then prefers Theta to Psi if and only if.... As Hinich and Pollard (1981) show, this inequality holds if and only if.... [All the omitted parts are mathematical equations.]

Including Hotelling and Downs, all these scholars are theorists. Their works focused on theoretical deduction and model development. It is understandable that theorists are less concerned about empirical data. Therefore, these scholars did not provide information on the empirical relationship between center-seeking and winning. Even though Enelow and Hinich stated that the "candidate who is the closest to the center of the predictive space stands the best chance of winning" (1984: 461), their conclusion was mainly based on theoretically mathematical calculations.

In addition, some studies in this group did not even deal directly with the center-seeking theory. For example, Shepsle focused on the ambiguity of candidates' positions (1972).

Prominent as this center-seeking phenomenon may be, few empirical studies have provided sufficient information on how to measure the positions of voters and candidates, or whether their positions are close to the center of the spectrum.

The most basic measurement is to ask voters to report their own positions, and their perception of candidates' positions on an issue spectrum. To offer an alternative to the spatial method used in the studies mentioned above, Ranbinowitz and MacDonald (1989) suggested a "directional theory" formula. The spatial method measures the relationship between winning and the distance between voters' and candidates' issue positions. The directional study measured not only the positions but also the intensity. To do that, the researchers had to examine whether a candidate and a respondent were on the same side of an issue (which determined the direction), and then how far away their positions were (which determined the intensity). They illustrated their calculation using the National Election Study (NES)[2] (Stimson, 1984; Flanigan, 1988; Flanigan & Zingale 1991; Abramson, Aldrich & Rohde, 1986, 1990) data. As will be discussed later, the NES data cover only a few issues, which casts doubt on the power of the directional method.[3]

Among the few researchers using empirical data, Barnett, Serota and Taylor (1976) measured the voters' estimation of their spatial distance from the candidates on ten items[4] in a congressional election in Michigan. They observed the spatial distance between the voters and candidates and then advised the Democratic candidate to move his positions toward those of the voters. For example, when most voters' positions were close to the Democratic party, they would advise the candidate to emphasize his party affiliation. This study implies that those who manage to decrease the spatial distance from the voters are more likely to win.

However, a few criticisms are offered. In the 1976 study, there was only one setting: north-suburban Detroit. The sample was mostly limited to the Democrats. The spatial distance was calculated in terms of four issues only, namely: crime prevention, integrity and honesty in government, inflation, and busing. Thus, few generalizations could be made. The present study took a further step to include a more geographically representative sample and examine more issues to make generalization possible.

In addition, it should be noted that the Michigan study focused on the ideological distance between voters and candidates, instead of the political spectrum or the center of it. However, it still can be argued that a spectrum was the underlying reference for the measurement of distance.[5] Nevertheless, the method employed in that study was problematic, which will be discussed in the next section.

The NES surveys ask few questions on issues that can be placed on a left-right spectrum; and among the issues only some are measured on a seven-point scale. They are 1) services vs. spending, 2) defense spending, 3) government vs. private health care, 4) government's role in employment and living standard, 5) government helping blacks and other minorities, and 7) women's rights. This present study added several more issues to provide a broader picture of the left-right ideological spectrum.

Definition and measurement of the center

To test a center-seeking theory, the first task is to define the "center."[6] To do so, we should measure the candidates' and voters' positions. One common method of measuring ideological issue stands, as in the National Election Studies (NES), was a seven-point left-right continuum scale. Survey respondents were asked to estimate their own positions and their impression of candidates' positions based on the scale. The extreme left (point 1) and extreme right (point 7) were defined by examples, with the points from 2 to 6 left undefined. This provided an easy and flexible criterion for the respondents to position their stands. For example, an issue question was asked this way:

> Some people think the government should provide fewer services, even in areas such as health and education in order to reduce spending. Suppose these people are at one end of the scale at point 1. Other people feel it is important for the government to provide many more services even if it means an increase in spending. Suppose these people are at the other end, at point 7. And of course, some other people have opinions somewhere in between at points 2, 3, 4, 5, or 6. Where would you place yourself on this

> scale, or haven't you thought much about this?

The respondent was then asked to place candidates' positions on the same scale. Candidates' and voters' positions can be aggregated and compared. The Detroit election study by Barnett, Serota and Taylor (1976), as mentioned earlier, measured the ideological positions of the candidates and their parties in a similar but arguably problematic way. Instead of offering clear definitions of reference points (two ends) and an easy-to-understand scale (like the NES), their reference frames were difficult to comprehend, especially for lower educated respondents. The following is an example of how questions were asked in their study. Respondents had to deal with this highly abstract "concept scale." It is reasonable to question the meaning of its measurement results.

> If John. F. Kennedy and Dwight D. Eisenhower are 10 political inches apart, how far are:
>
> Crime prevention and the Republican party?______
>
> Crime Prevention and Inflation?_______

Page (1978) also made a contribution to the measurement of the center. He analyzed candidates' speeches and other forms of statements to summarize their positions on various issues, and then compared the positions against two measures of public opinion.

His first step was based on the results of national opinion polls, of which the results were a yes-no dichotomy. Page then calculated the number of times a candidate was in agreement or in disagreement with the "plurality of the public." This method measured which candidate agreed more often with the public. The frequency of a candidate's agreement with the public was considered a measure of closeness to the center. For example, if candidate A agreed with the public 90% of the time (on yes-no survey questions), while candidate B agreed 60%, then A was closer to the center of public opinion.

This was one way to *conceptualize* the center: *the center as the desire of the majority*. With individual issues, the candidate who agreed with the majority was closer to the center (on one issue). When the issue stands were summed, the candidate who agreed with the majority the most was closer to the aggregated center (of all issues). Unfortunately, this measure could be problematic. Let us use abortion as an example. Although there are some people who are against any abortion, and others are against any restriction on it, many remain in the middle of the two extremes (favoring some restrictions but generally supporting abortion in certain conditions). For an issue like this, the yes-no dichotomy may not work.

The second method utilized by Page was a "closeness-to-the-medium" technique, requiring surveys with multiple-alternative questions. On each issue he estimated the distribution of public opinion (and thus the center). He then judged in which quartile a candidate's position fell. For instance, if candidate A's position fell in the second or third quartile, and B's fell in the first or fourth, then A was closer to the center.

Page (1978:305) admitted that this method was also problematic.

> Even so, this method is subject to measurement error. In practice, for items with three or four response alternatives it is not easy to estimate the location of the quartiles, and there is additional uncertainty in locating candidates' positions relative to the quartiles.

Nevertheless, the concept of this second method was widely applied, which was to develop a scale for each issue, and use the center of the scale as the center. This is the second way to conceptualize the center: *the center of the scale as the center of public opinion.* For example, on a 7-point scale, as Page put it, point 4 was the center "by definition." It was difficult for Page to determine the positions of the public and candidates on each issue, but the conceptualization of scaling has been widely used in many surveys, including the NES. Unlike a single researcher (e.g., Page), survey respondents would have fewer problems with self-reporting of their own positions and their perception of candidates' stands on the scales. Although candidates' actual stands may not be accurately reflected, at least the center of public opinion can be calculated. Also, candidates' real positions are not as important as where voters think they stand, since voters are likely to cast their votes based on their perceptions rather than reality.

To determine the center of issues as a whole, Page (1978) noted that it would be ideal to not only count or tabulate issues, but also to weigh each issue by its salience to the voters, as well as considering the interactions between issues. He, however, admitted that such an issue-aggregation task would be difficult due to the lack of knowledge to weigh and measure the distance among those issues.[7]

The above studies did not solve two important problems. First, they did not pay enough attention to the mass media's role in influencing voters' perception of candidates' ideological positions. No matter what candidates' stands on issues are, if voters do not have the information, logically candidates' "real stands" would not count. Second, thsy study did not offer a satisfactory solution to the definition of the center (of issues). Especially, whether the centers of the scales are the "real" centers of public opinion should be further examined. The present study was to address these two questions.

The Importance of Mass Mediated Influence

The importance of mass media was the core of this study. The media in recent decades have evolved into a major source of information for the voters in election campaigns (Khan, 1993; West, 1993). Graber described the role of the media in recent campaigns as "powerful and growing all the time" (1989: 227). The media appear to be important in the process of shaping voters' impression of candidates' ideological positions.

Of the various media forms, news appears to play the most significant role. News, as suggested by media sociologists (e.g., Tuchman), is a "window on the world," and reality for many is constructed by the media (1978). How we function is based on the "pictures in our head" about the outside world, although the pictures may deviate from reality. There is no doubt that the main information source about the world, nowadays, is the media (Lippmann, 1922; DeFleur & Ball-Rokeach, 1989: 258-262). As Nimmo and Combs suggested, political realities are also mediated illusions (1983). Based on these arguments, news has also become the most important source of information for voters to perceive the ideological positions of the candidates.

Most people do not have direct access to candidates, especially those in higher races. In other words, what voters learn "is not the real campaign but the media's version of it" (Patterson, 1980: 9). Thus, it can be suggested that no matter how far away the candidates' "real" messages are from what is shown in the media, only the mediated messages count. This explains why candidates strive for media's positive coverage (Patterson & Davis, 1985). An extreme example is a cartoon in which a boy asks his father: "Dad, if a tree falls in the forest, and the media aren't there to cover it, has the tree really fallen?" (Noelle-Neumann, 1993.) In the reality of politics, if the media do not cover a candidate, the candidate virtually does not exist and has no chance of winning (Meyrowitz, 1992).

In terms of the power of the media in elections, Nelson (1993), Patterson (1980), and Wattenberg (1994) have argued that it has been increasing while the function of other message outlets such as party organizations has been on the decline. According to her analysis of Italian politics, Mandelli (1995) argued that the media have been playing a more crucial role in political orientation because people's interest in politics has increased, while their trust in political parties has diminished. This echoes other scholars' arguments that people have become more dependent on the media, instead of party organizations, for political information.

The examination of the present study focused on issues. The print media, especially newspaper, appear to be an ideal source of such information. Although there is an argument that television news is a primary source of political information (Chang, 1993), when compared with other media such as the broadcast media, Patterson (1980) found that the print media provide more detail and depth in discussing issues. Nimmo and Combs also called TV news an "acquaintance medium" instead of a "source of knowledge" (1983: 45-46). These suggest that television news might not reveal enough information on candidates' ideology, which is required to test the center-seeking hypothesis.

By contrast, print media coverage is a good source of information on candidates' policy stands as revealed in debates and speeches, which are less likely to appear in TV news or political advertising. Unless voters view debates and speeches on television (if these are available in the first place), only the newspaper is likely to provide a full or extensive transcript. It is difficult for a 30-second commercial or a 10-second sound-bite in TV news to cover any substantial information revealed in debates or speeches.

National broadcast news media such as CNN and C-SPAN usually have full or lengthy coverage of speeches and debates. The Networks traditionally broadcast presidential debates. However, during the regular news hour, only the PBS provides such coverage. Also, these outlets are unlikely to cover events in local campaigns. Some local TV stations may sometimes air debates, but their 30-minute news broadcasts can offer only sound-bites due to time constraint. For a comprehensive coverage of speeches and debates in local elections, only newspapers are capable of providing this service.

There is no doubt that paid media such as TV commercials are under direct control of the candidates, who can convey information of their choice to the public. In fact, a significant number of voters feel that political advertising helps them make voting decisions in general (Faber & Storey, 1985). By contrast, news coverage, which is controlled by journalists, may not focus on what the candidates intend to express (Alger, 1989; Patterson, 1980, 1994; Patterson & Davis, 1985). However, political advertising focuses more on images rather than issues (Shyles, 1984; Latimer, 1989), which are the focus of our study. Besides, newspapers have started to provide more coverage of political commercial content (West, 1993: 57-60). Thus, newspapers appeare to be the best place to see the framed stands of the candidates. Additionally, newspaper articles are more obtainable and readily available than local television news transcripts or video tapes, especially when campaigns in several states are to be studied. As a result, newspaper was chosen as the medium for study.

RESEARCH QUESTION

This study was to provide empirical evidence to examine the media portrayal of the "center-seeking" phenomenon and to test whether or not a candidate portrayed as a centrist by the media was more likely to win. However, please note that the real purpose of this study was to seek a methodological contribution in terms of testing the center-seeking mechanism based on press coverage. Therefore, the first goal was the focus.

Following the center-seeking hypothesis of Downs', we came up with the following hypothesis:

> H_1: The closer the candidates' issue stands (portrayed by the newspaper) are to the center of a political spectrum, the more likely the candidates will win elections.

Methodologically, a core question was how the center should be defined. Can scale-center be considered as the center of public opinion? This will be discussed further in the next section.

METHOD

Scale Construction and Definition of the Center

This present study of local campaigns followed the logic of the seven-point National Election Studies (NES) scale (e.g., Flanigan, 1988, 1992). We took the NES approach for two reasons. First, this scale has been tested many times with national samples, which addresses the concern of validity and reliability. Second, the NES scale employs the preferable logic of the second scaling method suggested by Page (1978), as previously discussed. That scaling method divides the ideological distribution (of issue stands) into several intervals and treats the mid-point of the scale as the center of ideology. This method was superior to the first method with problematic dichotomy, as explained earlier. (For the scales used in this study, see Appendix I.)

This study used a five-point rather than seven-point scale for ease of coding. We used point 3 as the center. This was not merely because point 3 was the center of a 5-point scale "by definition;" there were several other reasons.

First, Downs' model, which was the theoretical basis of this present study, assumed the center of the scale as the center of public opinion. (See Figure I.) Second, secondary analysis of the NES data showed the mid-points of public opinion on several issues (that were similar to those examined in the present study) were either on or very close to the mid-points of the scales (Abramson, Aldrich, Rohde, 1986; 1990).[8]

Third, we analyzed the 1992 NES data and found that the ideological distribution of the respondents (including both voters and non-voters) was a normal distribution (see Figure II) as theorized by Downs.[9] According to the same data, the means (center) of public opinion on issues measured by scales (aid to Blacks, health care, government service and spending, defense spending, and government involvement in jobs and standard of living) were very close to the mid-points of the scales (thus were close to a normal distribution).[10] (See Figures III to VII). Although the NES did not include all the issues that the present study analyzed, the fact that the several issues included by the NES and the respondents' ideology were (or being close to) normal distributions coincided with the basic logic of the present study. In other words, in general the center of public opinion usually falls in the middle of two extremes. As a result, it would be acceptable to assume the mid-points of the scales (of the present study) were close to the center of public opinion in reality.

In practice, the coders were instructed to treat the center of each scale as "neutral" or "middle-of-the-road," which followed the logic of the NES scales. When a respondent was read the definitions of the two extremes on an issue and presented a 7-point NES scale, point-4 certainly represented a middle position. On a 5-point scale, the middle would be point 3.

Since coding was performed on each campaign individually, the coders were able to compare the relative stands of both candidates on each issue. Using the definitions of the two extremes and center as a guideline, the coders were able to determine the relative difference between the two candidates (based on press coverage) on each issue. A good example was when a candidate said "no new taxes," which suggested neither cutting nor increasing taxes, the candidate was coded as being on point 3. When a news story stated that candidate A would increase taxes by $300 million while B would increase them by $150 million, then A was coded as being more extreme than B. In another state with a different political climate, if candidate C wanted to increase taxes by $5 million while D advocated only $2 million, then D would still be coded as being closer to the center.

An underlying guideline was that the current law or situation in a particular environment was treated as the center. For instance, on the issue of abortion, candidates' ideological positions were judged by whether they advocated more or less restrictions than what their state already had. In other words, "current situation" was the reference point for comparison (which was the center).

In a political environment where the public opinion center appears not to be in the center of a scale (for example, if the real center is 3.7 on a 5-point scale), this method may still work. What our method in fact examines is which candidate is more extreme than the other. Where the center is appears to be less important. For instance, if candidate A is portrayed as being on point 5, and B on 4.2, then B is still more likely to win. Therefore, the scales would work in various political environments where the distributions of public opinion or policy stands were different.

When a story did not offer enough reference, such as when it discussed only one candidate's stance, coders took a "conservative" approach. This means that when a coder was not sure whether a 4 (or 2) or 5 (or 1) was appropriate, a 4 (or 2) was assigned. For example, if a candidate invited people of both sides to a meeting discussing environmental concerns, and took a non-centrist position by favoring environmental protection over local economical development, this candidate would be assigned a score of 2. The reason is that if this candidate took an extreme position, it is highly unlikely for him or her to invite the other side to this meeting. On other occasions when only one candidate was mentioned in an article, coders were encouraged to compare the opponent's positions according to other articles published around the same date (to avoid the possibility that the opponent's stance has changed over time). If no reference could be drawn, it was up to the coders' discretion whether and how to code a story.

Measurement

The unit of analysis was a candidate's issue position as portrayed in a news article. A five-point scale corresponding to the left-right or liberal-conservative spectrum was constructed to measure the ideology of the candidate framed by each article.

The two extremes of the five-point scale were defined (see Appendix I). The selection of issues and the assignments of left-right position points were based on pre-tests of the sampled newspaper articles, and reviews of related literature, including issues examined in the National Election Studies. Thirteen issues (abortion, labor, business, crime punishment, gender equality, racial equality, environment protection, government involvement, health care, military budget, taxation, gay rights and welfare policy), as well as direct mention of ideological positions (labels), were studied. Each of the thirteen issues was placed in the context of the liberal-conservative spectrum. For example, conservative means being opposed to over-centralization of governmental power or advocacy of lower taxes, whereas liberal emphasized a "regulated" free-market economy, and social equality.[11]

A trained second coder viewed 15% of the selected 114 newspaper article. The inter-coder reliability was 93%.

The analysis was to convert the ideological scores (from 1 to 5) of each candidate on each issue in each article to a measure of "how far the candidate is from the center of the ideological spectrum." The center "3" was re-coded into 0 (0 unit away from the center); 2 and 4 were re-coded into 1 (one unit away from the center); and 1 and 5 were re-coded as 2 (two units from the center). The distance of a candidate's ideological position from the center in a news story was summed, then averaged to yield a mean of the centrality score, namely the "center mean." The center means of the winners and the losers were compared.

The original scores of issue positions were also calculated (namely the "issue mean"), but were not utilized in determining centrist tendency. For example, in a newspaper article candidate A was assigned a score of 2 on one issue, and a 4 on another; the mean would be 3 (the mean of 2 and 4), which superficially is the center. However, in fact this candidate was away from the center twice (for being 2 and 4 on two issues); thus the center mean would be (1) one.[12] By comparison, if a candidate was assigned a score of 3 on one issue and 4 on another, then the issue mean would be 3.5, and center mean would be .5. Superficially candidate B is more extreme then candidate A in terms of issue means (3.5 vs. 3.0, with 3.0 as the center). However, in fact, B was closer to the center because B is away from the center for only 1 unit once (score 3's center mean was 0, and score 4's center mean was 1, and the average was .5), while A was away from the center for one unit twice (both 4's and 2's center means were 1, and the average was 1). Nevertheless, issue means could still illustrate a general tendency of positions on the political spectrum, although center means should be the focus of our study of the center-seeking theory.

Sampling & Period of Study

Five major newspapers were chosen for this study: the *Denver Rocky Mountain News, Miami Herald, Los Angeles Daily News, Minneapolis Star Tribune,* and *Boston Globe* . The selection of states (California, Colorado, Florida, Massachusetts, Minnesota) in five different geographic areas produced a geographically diverse sample. The samples from these five papers included 10 candidates, with 5 from the Democratic Party and 5 from the Republican Party. There were five male incumbents and one female among the candidates. The sample covered five US gubernatorial campaigns.

The sampling was based on three constructed weeks (Riffe, Aust & Lacy, 1993). The time period was from mid-September (after the primaries) to early

November (the election day). A total of 283 newspaper articles on the general elections of five races in 1994 were selected. The text of these stories were downloaded from a national computer on-line service, the American Online (AOL). The AOL has a "news library" section with the text of newspapers from various states.

Of the 283 articles, 169 (59.72%) articles did not reveal any ideological position of the candidates studied. The 169 articles included coverage of the "game," (e.g., who "won" a debate, poll results, or the firing of a campaign manager), campaign-specific issues (e.g., disagreement on a harbor construction or a local referendum), personal image (e.g., honesty or integrity), and "human interest stories" such as a candidate's car being chased by another vehicle on the highway. The fact that about 60% of the articles did not reveal any issue information echoes some scholars' criticism of the media for not providing the public with adequate political information (Graber, 1992; Jamieson, 1992B; Patterson, 1994).

A total of 114 (40.28%) articles, which provided issue information on the candidates, were analyzed and coded. These articles included news coverage, columns, and editorials with information reflecting issue stands of the candidates. Letters to the editor were excluded, unless they were written by a candidate stating issue stands. The reason was that the credibility (as perceived by potential readers) of these letters were not likely to be as high as other stories written by reporters. The news coverage included the content of debates, speeches, political advertising, and other forms of statements.

Among those 114 articles, 15 were from California, 18 from Colorado, 20 from Minnesota, 34 from Massachusetts, and 27 from the Florida campaign. Of these 114 stories, 49 (42.98%) included information on both candidates in a race. Altogether, 175 cases were found. There were 327 discussions of the 13 issues[13] (see Appendix I). Among them, the issues of taxation (62 times, or 18.9%), crime punishment (59 times, or 18.04%), and government involvement (58 times, or 17.73%) were most frequently discussed.

FINDINGS

In comparing the "center means" of the winners and of the losers based on the analysis of news coverage, we found that there was a significant difference between the winners and losers' mean distances from the center in each of the campaigns.

In the Colorado campaign (n=26), the "center means" of the winner and the loser were .60 and 1.10 respectively, with t=-2.38 ($p< .05$). In the Florida campaign (n=37), the "center means" of the winner and the loser were .69 and 1.13 respectively, with t=-2.77 ($p< .01$). In the California campaign (n=23), the "center means" of the winner and the loser were .58 and 1.06 respectively, with t=-2.15 ($p< .05$). In the Minnesota campaign (n=36), the "center means" of the winner and the loser were .50 and 1.33 respectively, with t=-4.94 ($p<.01$). In the Massachusetts campaign (n=53), the "center means" of the winner and the loser were .57 and 1.10 respectively, with t=-4.03 ($p< .01$). It is noted that in each of the five campaigns, judging by "center mean," the winner was always closer to the center (see Tables I-V).

Some researchers might argue that pairwise t-tests are more appropriate for our analysis. An analogy explains this well: you measure the height of a person 100 times, but you still measure the same thing. Following this logic, we should look at only the aggregate center-mean of each candidate.

A matched pair t-test on center-means was performed, which compared both candidates in each of the five campaigns. The t-value was 7.995 ($p< .01$, $df=4$).

The data from the five election campaigns were then combined. The distribution of candidates' ideology (i.e. the grand issue means; see Figure VIII) coincided with the Downsian model (see Figure I). It was a normal distribution with 66.3 % of the cases falling between -1 and +1 standard deviation. This meant that most of the ideological stands of the candidates reflected in the media were situated at the center. This finding suggested that candidates competed to the portrayed as taking centrist issue positions, which supported Downs' theory (although not directly). When candidates want to be defined as centrists, and the voters' ideological distribution shows that most voters are moderate (see Figure II), we can link the two and argue that: 1) people vote for candidates whose ideology are closer to theirs; and 2) since most voters are centrist, centrist candidates are likely to win.

Combining the five campaigns ($n=175$), we calculated the grand "center means" of the winners ($n=85$, mean = .58) and of the losers ($n=90$, mean = 1.14). There was a significant difference between the winners' and losers' mean distances from the center, with a higher t-value of -7.56 ($p< .01$). The winners were much closer to the center than the losers (See Table VI). This result generally supported the hypothesis that the closer the candidates' issue stands (portrayed by the media) are to the center (of the political spectrum), the more likely they would win. This result also suggested that the 1994 elections may not be a true right-wing victory (since centrists were more likely to win). However, this statement is less convincing because of the small N.

CONCLUSION AND DISCUSSION

The empirical evidence of press coverage in this study, using the method developed, supported the center-seeking hypothesis. Those who were portrayed by the media as centrists were more likely to win. This coincided with the results of other studies using different methods, which provided us with more confidence of our method.

It should be emphasized that the core purpose of this paper was not to "prove" a single winning strategy for political office seekers.[14] The goal was to propose a new method based on press coverage analysis in order to illustrate the influence of mass media in elections. The present study also addressed the measurement of ideological center of issues. In addition, its finding provided empirical evidence for a hypothesis developed by political scientists. The results suggested candidates who were portrayed by the press as centrists were more likely to win.

The present study supported the center-seeking hypothesis. As mentioned earlier in the literature review, candidates may seek the middle-ground to win elections. Although an office-holder is supported by only a portion of the voters, he or she is elected to be the leader of the whole population. In order to serve all the people with different ideologies, the center seems to be a reasonable position.

The methodological issue about the definition of the center should be further examined. Like what Page and other researchers have faced, as mentioned in the literature review, the definition of the center is problematic. The 1992 national data were used to assume that the centers of public opinion in 1994 in each of the five states fell on the mid-points of the scales. Future studies may want to investigate the methodological aspect in order to test the center-seeking hypothesis with more scrutiny and accuracy. For example, it would be ideal to examine press coverage of campaigns in the same year the NES survey is also conducted. This can avoid the possibility that the distribution of public opinion may have changed over time. Also, surveys should be conducted in individual states and the results compared with local press coverage. The reason is that national surveys might not cover issues that are raised during the campaign and are unique to a local political environment.

It should be noted that this present study was based on a macro theory. Using empirical data (which is more micro by nature) to test a macro theory, problems are likely to occur. (For example, the distribution of position on a certain issue may be slight skewed although the mode is still in the middle of the scale.) Therefore, minor differences should be tolerated if the "whole picture" appears to be correct. The scaling, coding and the definition of the center of the present study should be acceptable (and consequently the findings). The high inter-coder reliability also offered confidence.

As for whether the five states were representative (for the purpose of generalization), the NES data provided support. We examined people's ideological distribution in the five states; each suggested a normal distribution (so was when the five states were combined) (Figures IX to XIV), as was the distribution of the nation (see Figure II). This suggested that the public opinion in general in these states had a normal distribution. In other words, the means of public opinion should be close to the centers of the scales.

Due to the limitation of the NES data, we were not able to run an extensive analysis to examine whether the scale of each issue in the present study corresponded with the general distribution of public opinion. This could only be done if all the 13 issues were also measured with scales in the NES, and the means of public opinion on those issues also fell on the centers of the scales. However, since respondents' ideologies and most of the available issues suggested a normal distribution, the measurement used in the present studies appeared to be acceptable. It can be argued that the scale in the present study can be used to test the "real" centers of the issues. Because the NES scales have been used many times with large samplings, their validity and reliability should be of little doubt. Using a tool similar to the NES scale for the present study should be acceptable.

There are two issues this paper could have addressed in further depth: 1) whether people vote ideologically; and 2) whether the media have a direct impact on voters' perception of candidates' ideology.

We would like to briefly discuss the first issue. A group of scholars (e.g., Campbell et. al., 1960; Converse, 1964, 1970; Nie, Verba & Perocik, 1976) questioned whether the general public had the ability to perceive and articulate political ideology. If voters do not have a well-developed liberal/conservative belief system, they might not use the left-right ideological spectrum in their voting decision. According to Flanigan and Zingale (1991), 21% of the population had a concrete conceptualization of the ideological spectrum (being able to put a liberal or conservative label on issues and candidates). Further, 31% had the ability to think of policy or political issues in terms of "group benefit," such as the rich versus the working class, and the consumer versus big businesses. If 52% of the population have the ability to think ideologically, it can be argued that ideology is important. (Considering the traditionally low turnout in most elections, if most of the 52% vote and they use the ideological spectrum as reference in their decision, ideology can be powerful.) Additionally, Page and

Shapiro (1992) presented a very convincing case against the studies downplaying voters' ideological ability and argued that people were capable of making rational decisions.

The second issue was not able to be defended adequately. However, like all research, certain assumptions have to be made. It is impossible to treat everything involved as a topic for investigation. For example, purchasing is assumed to be based on the free will of consumers, so that we can study why they buy certain products. If a scholar abandons this basis and insists that every act is according to God's will, there is probably no reason to study consumer behavior. Similarly, this thesis has to assume that: 1) there is such a thing called ideology; 2) ideology influences voting decisions, and 3) press coverage has an impact on voters' behavior. To question each of these, that again, would be a good topic for other studies.

As for further research, a worthwhile topic is scaling. Although the present scale worked reasonably well in individual political environments, it would be ideal if researchers can develop a universal scale that can be used in every state. In that scale, each point should be clearly defined in contrast to the present scale and the NES one where only the two extremes are defined. A benefit of such scale is that coding would be more accurate. For instance, when a story mentions only one candidate, it would be easier for coders to assign an ideological score without looking for reference from other articles.

Lastly, we would like to discuss the "so what" question. First, we may have added an important aspect (the role of media in terms of voters' perception of candidates' ideology) to a prominent (Downsian) tradition of political research. Page (1978) had to painstakingly collect candidates' campaign literature and speech transcripts in order to test the center-seeking hypothesis with empirical data. By comparison, this paper suggests that it is acceptable to study only media coverage of candidates' positions, which is an easier approach. Second, in terms of method, we have suggested using "center-mean" to measure the ideological center. We hope that other political communication researchers would find these two concepts helpful.

Notes

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[1] For a thorough overview and critique of Downs' models and Downsian scholars' work, please see Page (1978), chapter 2.

[2] Surveys conducted by the Survey Research Center/Center for Political Studies at the University of Michigan, which are considered the authority on election survey studies in the U.S.

[3] The Directional Theory suggests that 1) if more voters are on one side of the neutral point, the candidate who is on the dominant side will win; 2) when the electorate has a clear preference of policy, a candidate should be as aggressive as possible on this side of spectrum, but still within the region of acceptability. In other words, this theory suggests that candidates receive little reward for being centrist. If voters are evenly divided, an extreme position (if it remains within the region of acceptability), is "competitive with a centrist strategy." According to this theory, in a conservative state, a candidate should be as conservative as possible. The authors mentioned a few congressional campaigns to support their theory, such as the 1984 senatorial campaign in North Carolina in which Jesse Helms won. They also cited few studies analyzing the ideology of House representatives, saying the law makers were usually more extreme than the mean voters. We question whether a handful of campaigns are sufficient enough to disprove the centrist strategy. Also, as the present study implies, even if candidates' real stands are extreme, the media may still portray them as centrists, which could lead to their victory.

[4] The 10 items are: crime prevention, integrity and honesty in government, the Republican party, inflation, the Democratic party, the Democratic candidate, campaign reform, busing, the Republic candidate, and "me," which is a voter's position on each scale.

[5] For example, the statement "Issue A and Issue B are 10 political inches apart" suggests a spectrum or scale.

[6] Although not directly related to the present study (center and distribution of ideological issue positions), for a detailed review of the definition of the political center in European party systems, see Daalder (1984).

[7] The multi-dimensional spatial model of measurement could be a good attempt to tackle the problems of weighing and the inter-relationships between issues and other variables, as illustrated in the study by Barnett, Serota & Taylor (1976).

[8] They included government spending and services, defense spending, government's involvement in job and standard of living, aid to minorities, and women's status. The median voter's stands were either on or very close to the mid-points of the scales. The only exception was women's status in 1988, which is close to point 1.

[9] The authors would like to thank Professor William Flanigan for providing the NES data and codebooks.

[10] Like the 1988 data, the only exception was women's status, of which the mean was very close to point 1 (i.e., men and women should be equal). Many other issues were not measured with scales in the National Election Studies (Flanigan, 1992). In addition, although the issues mentioned showed slightly skewed distributions, the curves suggested that they were close to normal distributions. The peaks of the curves were close to the centers of each scale. In other words, most people's

issue positions were close to the center. As a result, candidates appeared to be centrist were likely to win.

[11] The construction of the left-right scales and definitions of their position points utilized information from Jamieson (1992A), Parenti (1988), Jennings (1992), Smith (1990), Weaver, Graber, McCombs & Eyal (1981), Political parties of the world (1984), Asher (1992), Goldfarb (1991), Page (1978), and Flanigan (1988, 1992).

[12] The center mean and issue mean were calculated independently; otherwise, the results would be misleading. For example, if the center mean was directly translated into issue mean, a 2 and 4 would yield an issue mean of 3, which would be a center mean of 0. However, calculations were performed to translate 2 and 4 into a center score of 1 twice, and the center mean was 1.

[13] Direct mention of ideological stands, such as being a liberal or conservative, was not considered as an issue, but was included in the calculation of "center means" and "issue means."

[14] It seems that the center-seeking factor is not the only determination of election victories. For example, according to the 1992 NES data, Perot was perceived as being more moderate than Bush and Clinton. (This was based on respondents' placement of ideological labels between "extremely liberal" to "extremely conservative." If issue stands were taken into consideration, the results may be different. However, the NES asked respondents' perceptions of Clinton's and Bush's stands on only very few issues. Questions about Perot's stands were even not asked.) Nevertheless, in general the winner Clinton appeared to be slightly closer to the mid-point than Bush.

--	Mean	Distance from Mean	Dis. from point 4.0
Center(mean)	4.206	0	0.206
Clinton	3.186	1.02	0.814
Bush	5.047	0.841	1.047
Perot	4.313	0.107	0.313

	Mean	Std Dev.	Mode	Median
Clinton	3.186	1.375	3.0	3.0
Bush	5.047	0.032	6.0	5.0
Perot	4.313	1.802	4.0	4.0

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Appendix 1
Coding Sheet

Case number: ___________

1. Article #:____________

2. Campaign: ______

   1. Colo. Gubernatorial
   2. Fla. Gubernatorial
   3. Calif. Gubernatorial
   4. Minn. Gubernatorial
   5. Mass. Gubernatorial

3. Candidate: _______
   1. Roy Romer (D)
   2. Bruce Benson (R)
   3. Lawton Chiles (D)
   4. Jeb Bush (R)
   5. Kathleen Brown (D)
   6. Pete Wilson (R)
   7. John Marty (D)
   8. Arne Carlson (R)
   9. Mark Roosevelt (D)
   10. William Weld (R)

4. Win/Lose: _________
   1. winner: (1, 3, 6, 8, 10)
   2. loser

5. Party: _____
   1. Republican
   2. Democrat

6. Sex: _________
   1. Female (5)
   2. Male

7. Incumbent: _____
   1. Yes: (1, 3, 6, 8, 10)
   2. No

8. Newspaper: ______
   1. Colo. Denver Rocky Mountain News
   2. Fla. Miami Herald
   3. Calif. Los Angeles Daily News
   4. Minn. Minneapolis Star Tribune
   5. Mass. Boston Globe

9. Publication Date: ____/____
MM / DD

10. Page #: _____

11. Section : ________
    1. front section (news)
    2. metro/local
    3. editorial
    4. others

12-14. Type of content: __________
    1. debate
    2. speech
    3. advertising
    4. interview/statement
    5. game: poll/strategy/endorsement/running mate
    6. performance/record
    7. analysis/editorial
    8. others

Ideological Spectrum

Ideology(self-claim): 1----------2----------3----------4----------5 n/a (9)
1. extremely liberal
5. extremely conservative

Abortion: 1----------2----------3----------4----------5 n/a (9)
1. no restriction on abortion
5. oppose all abortion

Labor: 1----------2----------3----------4----------5 n/a (9)
1. strongly support labor/union
5. strongly anti-labor

Crime Punishment: 1----------2----------3----------4----------5 n/a (9)
1. lenient punishment; (focus on prevention, e.g., social programs) (society's fault)
5. severe punishment e.g., the death penalty (criminals' personal responsibility)

Gender equality: 1----------2----------3----------4----------5 n/a (9)
1. women are/ should be equal
5. Place is at home/ implying inferiority

Racial Equality: 1------------2------------3------------4------------5 n/a (9)
1. pro-minority rights/treatments e.g., affirmative action
5. anti-favorable treatments/ rights

Business: 1----------2----------3----------4----------5 n/a (9)
1. highly anti-business in general
5. highly pro-business in general

Environment: 1----------2----------3----------4----------5 n/a (9)
1. earth absolutely first; strong environ. protection
5. little/no consideration on environ. protection

Government involvement: 1----------2-----------3-----------4-----------5 n/a (9)
1. more govt's involvement/ regulation
5. "small government;" little or no govt. involvement/ regulation; autonomy

Health care/ insurance: 1-----------2-----------3-----------4----------5 n/a (9)
1. total government run/ controlled system
5. total privately run system

Military spending: 1----------2----------3----------4----------5 n/a (9)
1. greatly decrease
5. greatly increase

Taxation: 1-----------2-----------3------------4------------5 n/a (9)
1. much higher in general
5. much lower

Welfare: 1-----------2-----------3-----------4-----------5 n/a (9)
1. greatly expand the system
5. greatly reduce/ abolish the system

Gay rights: 1----------2----------3-----------4----------5 n/a (9)
1. strongly support
5. strongly anti-

Table I

Difference between the Center Means (Ideological Positions from the Center) of the Winners & the Losers in the Colorado Election

	No. of cases	Mean	Stand. Dev.	SE of Mean
Winner	14	.595	.598	.160
Loser	12	1.097	.452	.130

t=-2.38 2-tailed $p < .05$

Table II

Difference between the Center Means (Ideological Positions from the Center) of the Winners & the Losers in the Florida Election

	No. of cases	Mean	Stand. Dev.	SE of Mean
Winner	15	.685	.445	.115
Loser	22	1.132	.507	.108

t=-2.77 2-tailed $p < .01$

Table III

Difference between the Center Means (Ideological Positions from the Center) of the Winners & the Losers in the California Election

	No. of cases	Mean	Stand. Dev.	SE of Mean
Winner	10	.583	.663	.210
Loser	13	1.058	.390	.108

t=-2.15 2-tailed $p < .05$

Table IV

Difference between the Center Means (Ideological Positions from the Center) of the Winners & the Losers in the Minnesota Election

	No. of cases	Mean	Stand. Dev.	SE of Mean
Winner	19	.500	.580	.133
Loser	17	1.329	.398	.096

t=-4.95 2-tailed p< .01

Table V

Difference between the Center Means (Ideological Positions from the Center) of the Winners & the Losers in the Massachusetts Election

	No. of cases	Mean	Stand. Dev.	SE of Mean
Winner	27	.570	.560	.108
Loser	26	1.097	.369	.072

t=-4.03 2-tailed p< .01

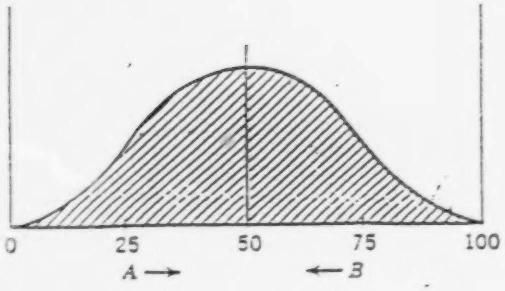
Table VI

Difference between the Center Means (Ideological Positions from the Center) of the Winners & the Losers in the Five Elections

	No. of cases	Mean	Stand. Dev.	SE of Mean
Winner	85	.580	.555	.060
Loser	90	1.144	.426	.045

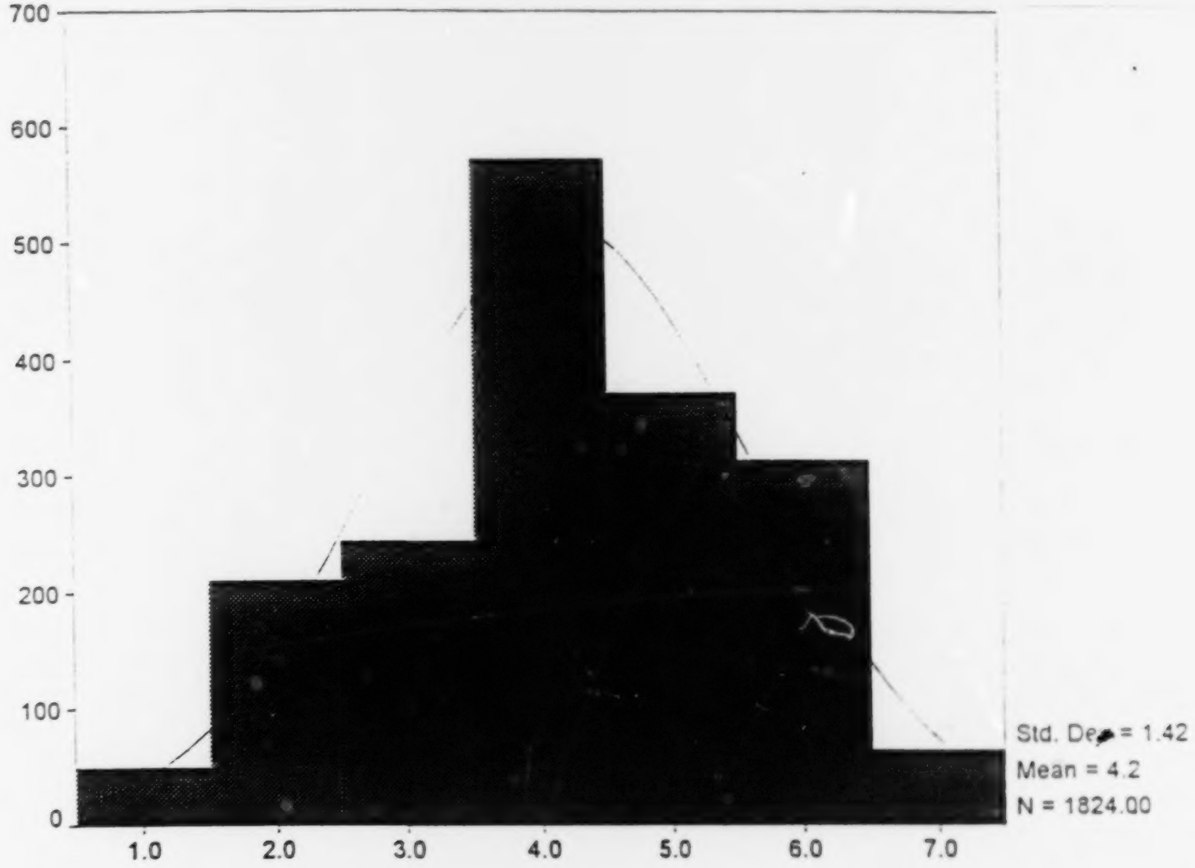
t=-7.56 2-tailed p< .01

Figure I
Theoretical Distribution of Voters' Ideology



Source: Downs (1957:118)

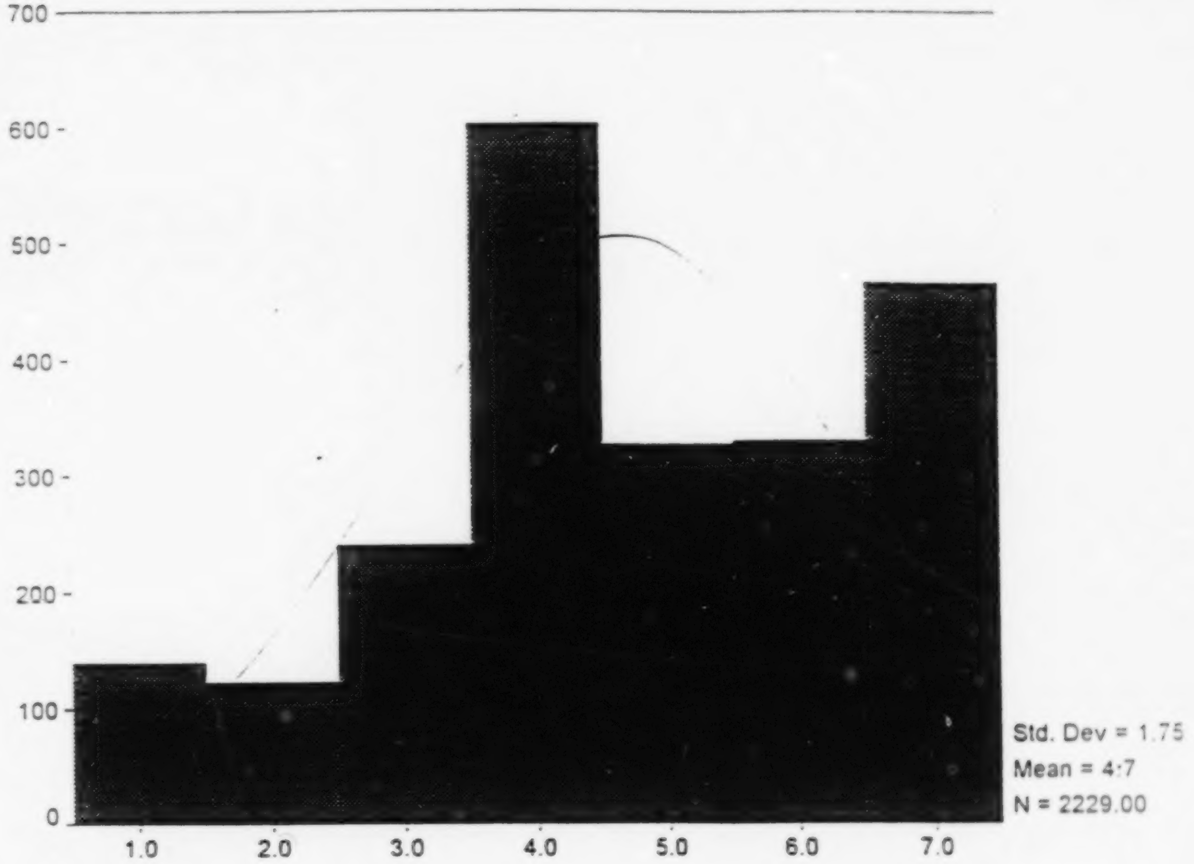
Figure II
Distribution of 1992 NES Respondents' Ideology



Value Label	Value	Frequency	%	Cum. %
Extremely Liberal	1	50	2.7	2.7
Liberal	2	210	11.5	14.3
Weak Liberal	3	244	13.4	27.6
Moderate	4	572	31.4	59.0
Weak Conservative	5	371	20.3	79.3
Conservative	6	313	17.2	96.5
Extremely Conservative	7	64	3.5	100.0

Mean	4.206	Std err	.033
Mode	4.000	Std dev	1.416
Median	4.000	Variance	2.005

Figure III
Distribution of 1992 NES Respondents' Stands on Government Aid to Blacks

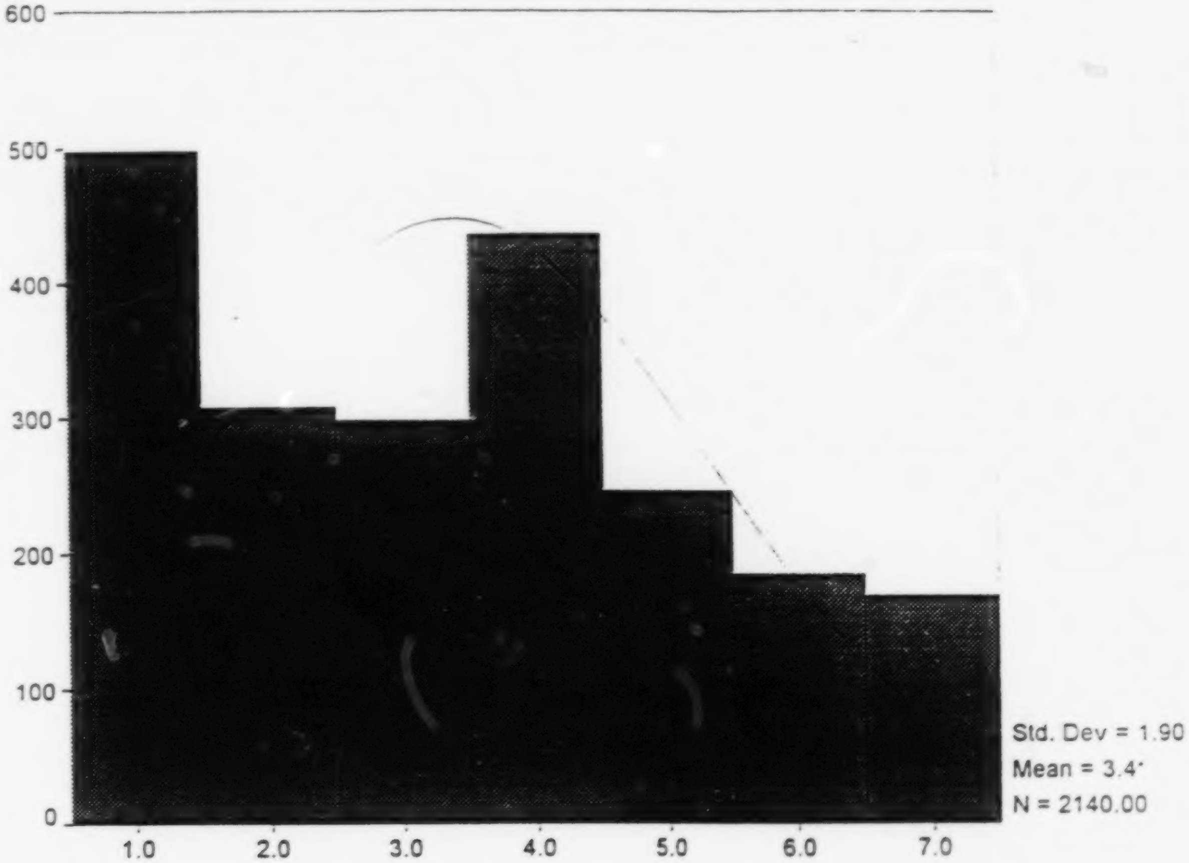


Q: Some people feel that the government in Washington should make every effort to improve the social and economic positions of blacks. Others feel that the government should not make any special effort to help blacks because they should help themselves. Where would you place yourself on this scale, or haven't you thought much about this? <"Don't know," "N/A" or "Haven't thought much" were counted as missing in the present study.>

1. Government should help blacks
7. Blacks should help themselves.

Mean	4.664	Std err	.037
Mode	4.000	Std dev	1.754
Median	5.000	Variance	3.075

Figure IV
Distribution of 1992 NES Respondents' Stanos on Medical Insurance

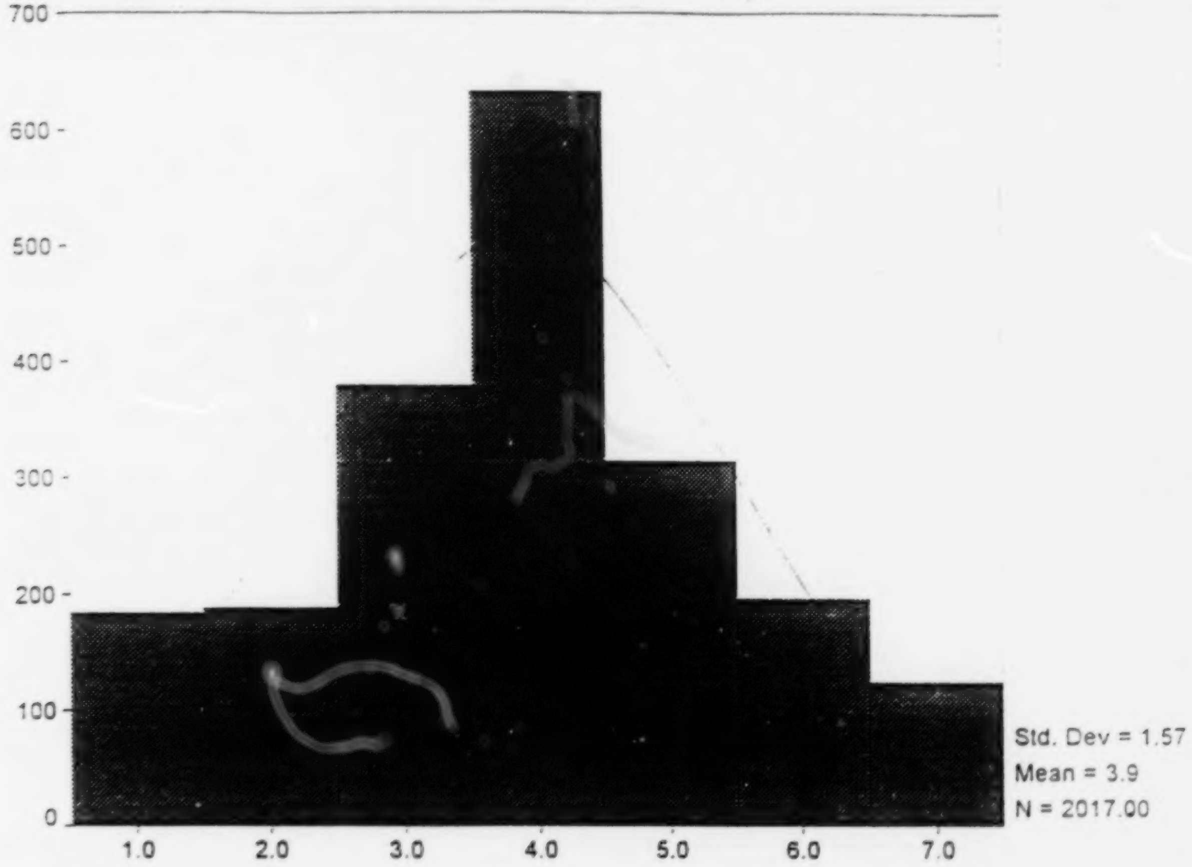


Q: There is much concern about the rapid rise in medical and hospital costs. Some people feel there should be a government insurance plan which would cover all medical and hospital expenses for everyone. Others feel that all medical expenses should be paid by individuals, and through private insurance plans like Blue Cross or other company paid plans. Would you please place yourself on this scale, or haven't you thought much about this? <"Don't know," "N/A" or "Haven't thought much" were counted as missing in the present study.>

1. Government insurance plan
7. Private insurance plan.

Mean	3.400	Std err	.041
Mode	1.000	Std dev	1.903
Median	3.000	Variance	3.622

Figure V
Distribution of 1992 NES Respondents' Stands on Government Services vs. Spending

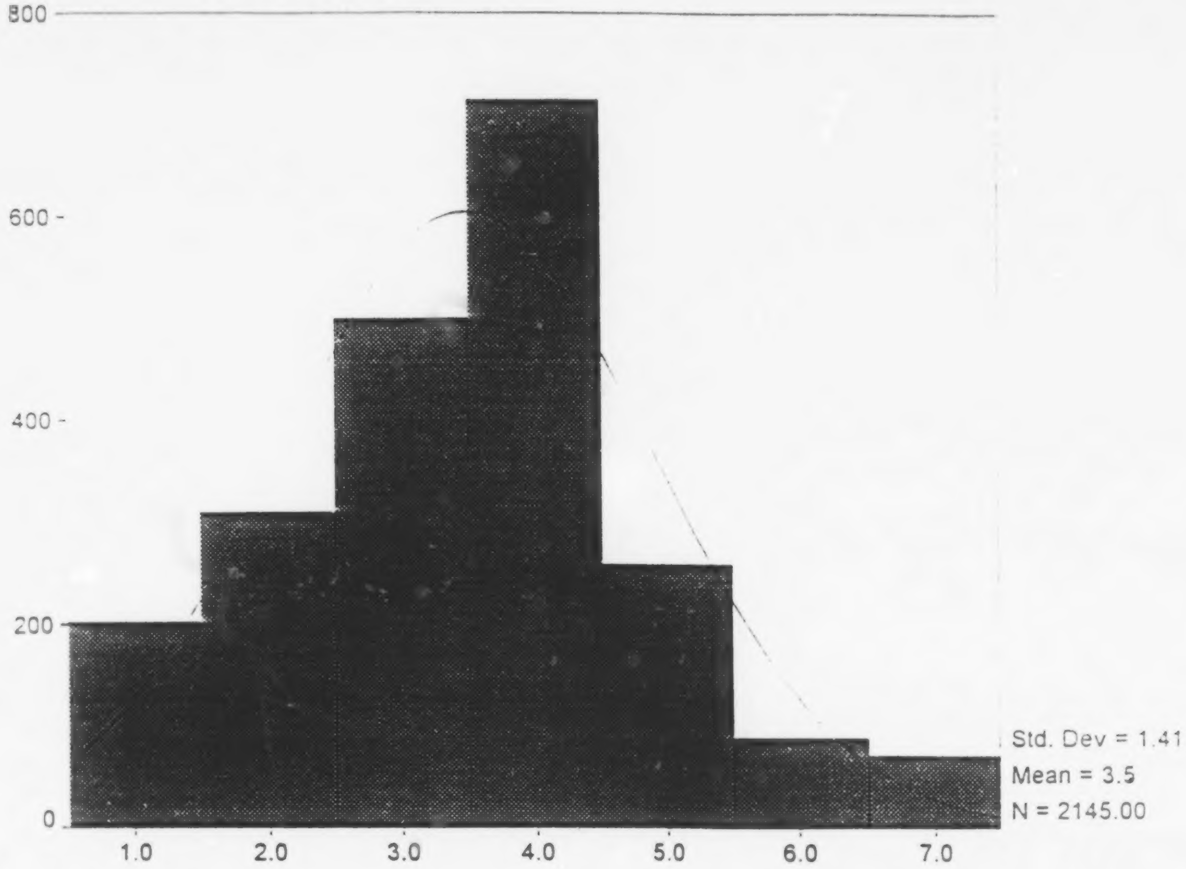


Q: Some people think that the government should provide fewer services, even in areas such as health and education in order to reduce spending. Suppose these people are at one end of the scale at point 1. Other people feel it is important for the government to provide many more services even if it means an increase in spending. Suppose these people are at the other end, at point 7. And of course, some other people have opinions somewhere in between at points 2, 3, 4, 5, or 6. Where would you place yourself on this scale, or haven't you thought much about this? <"Don't know," "N/A" or "Haven't thought much" were counted as missing in the present study.>

1. Government provides many more services, increase spending a lot
7. Government provide many fewer services, reduce spending a lot
<The present author reversed the direction of the original scale in order to fit the left-right/liberal-conservative arrangement.>

Mean	3.886	Std err	.035
Mode	4.000	Std dev	1.571
Median	4.000	Variance	2.468

Figure VI
Distribution of 1992 NES Respondents' Stands on Defense Spending

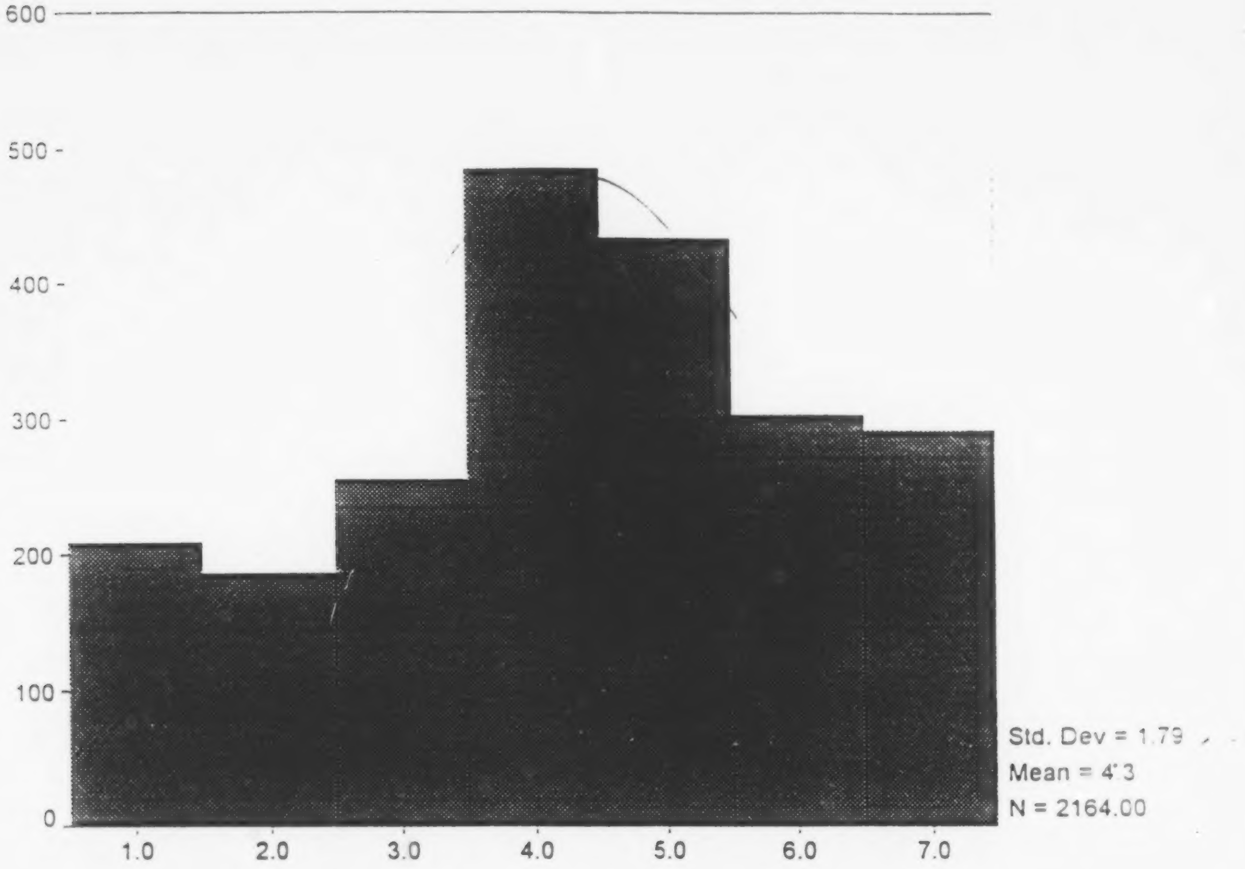


Q: Some people believe that we should spend much less money for defense. Others feel that defense spending should be greatly increased. Where would you place yourself on this scale, or haven't you thought much about this? <"Don't know," "N/A" or "Haven't thought much" were counted as missing in the present study.>

1. Greatly decrease defense spending
7. Greatly increase defense spending

Mean	3.497	Std err	.030
Mode	4.000	Std dev	1.411
Median	4.000	Variance	1.990

Figure VII
Distribution of 1992 NES Respondents' Stands on Government's Involvement in Employment and Standard of Living

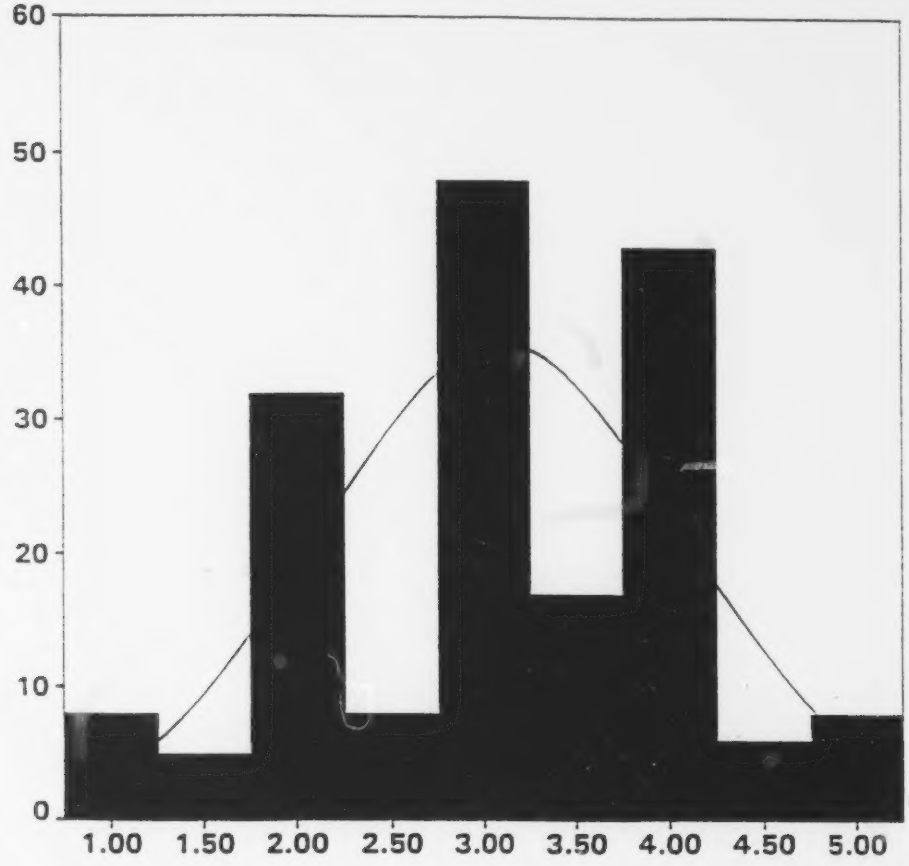


Q: Some people feel that government in Washington should see to it that every person has a job and a good standard of living. Others think the government should just let each person get ahead on their own. Would you please place yourself on this scale, or haven't you thought much about this? <"Don't know." "N/A" or "Haven't thought much" were counted as missing in the present study>

1. Government see to job and good standard of living
7. Government let each person get ahead

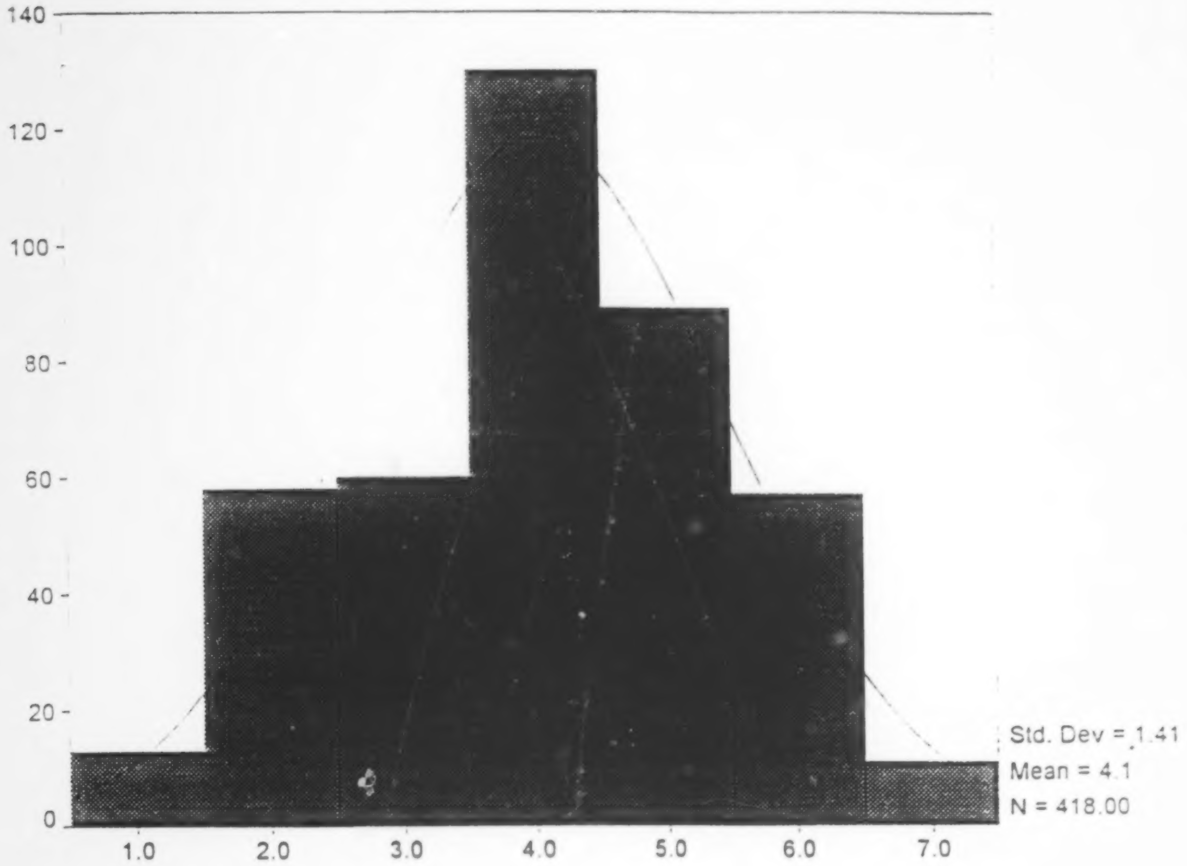
Mean	4.305	Std err	.039
Mode	4.000	Std dev	1.793
Median	4.000	Variance	3.214

Figure VIII
Distribution of Candidates' Ideology of the Five Campaigns



Mean	3.094	Std err	.073
Mode	3.000	Std dev .	.972
Median	3.000	Variance	.945
N= 175			

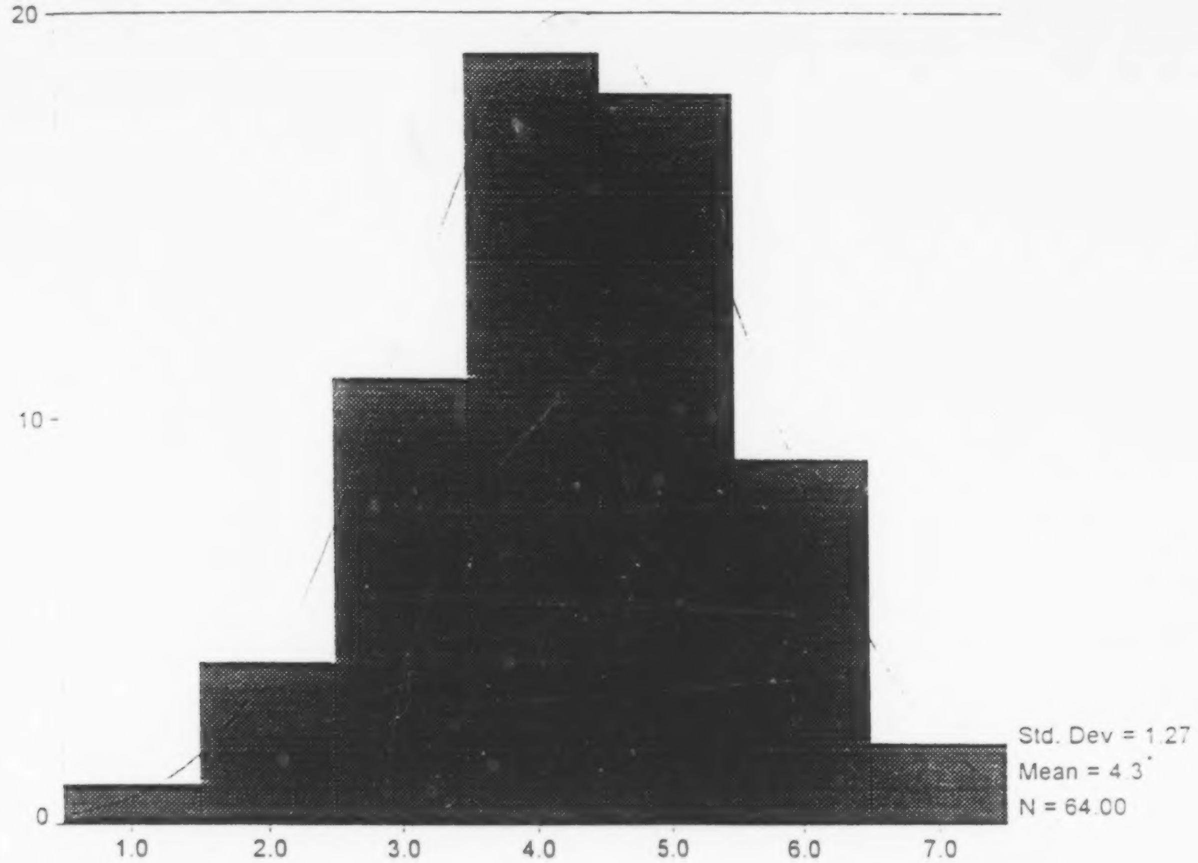
Figure IX
Distribution of 1992 NES Respondents' Ideology (Five States)



Value Label:
1. Extremely Liberal 2. Liberal 3. Weak Liberal 4. Moderate
5. Weak Conservative 6. Conservative 7. Extremely Conservative

Mean	4.050	Std err	.069
Mode	4.000	Std dev	1.406
Median	4.000	Variance	1.967

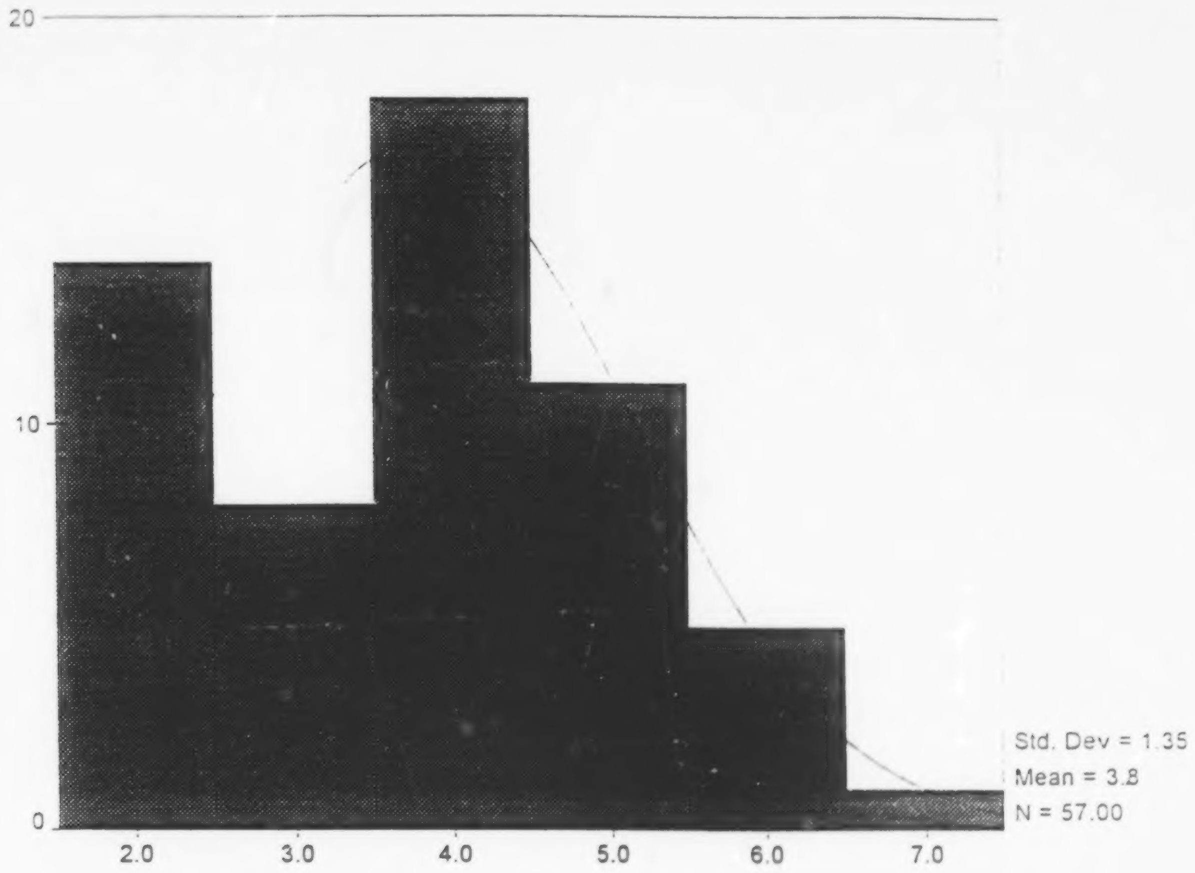
Figure X
Distribution of 1992 NES Respondents' Ideology (Minnesota)



Value Label:
1. Extremely Liberal 2. Liberal 3. Weak Liberal 4. Moderate
5. Weak Conservative 6. Conservative 7. Extremely Conservative

Mean	4.313	Std err	.159
Mode	4.000	Std dev	1.271
Median	4.000	Variance	1.615

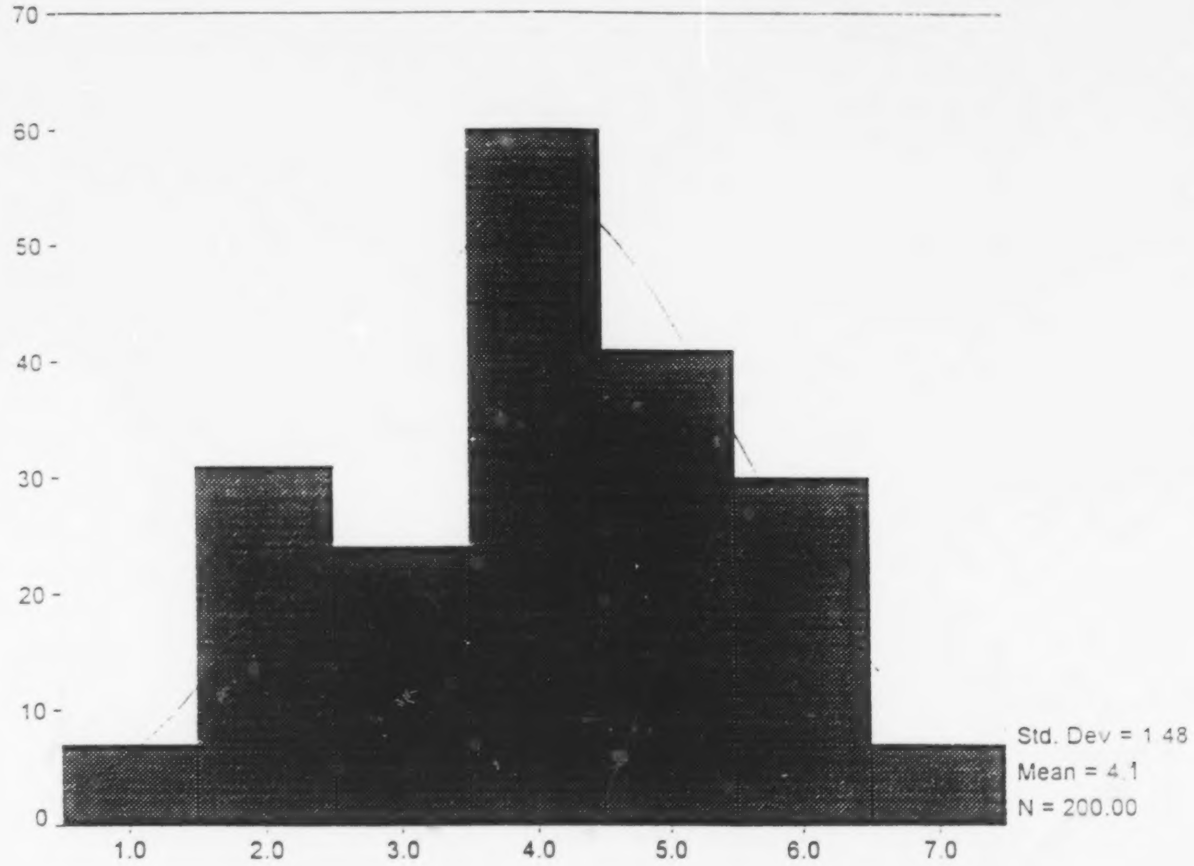
Figure XI
Distribution of 1992 NES Respondents' Ideology (Massachusetts)



Value Label:
1. Extremely Liberal 2. Liberal 3. Weak Liberal 4. Moderate
5. Weak Conservative 6. Conservative 7. Extremely Conservative

Mean	3.789	Std err	.178
Mode	4.000	Std dev	1.346
Median	4.000	Variance	1.812

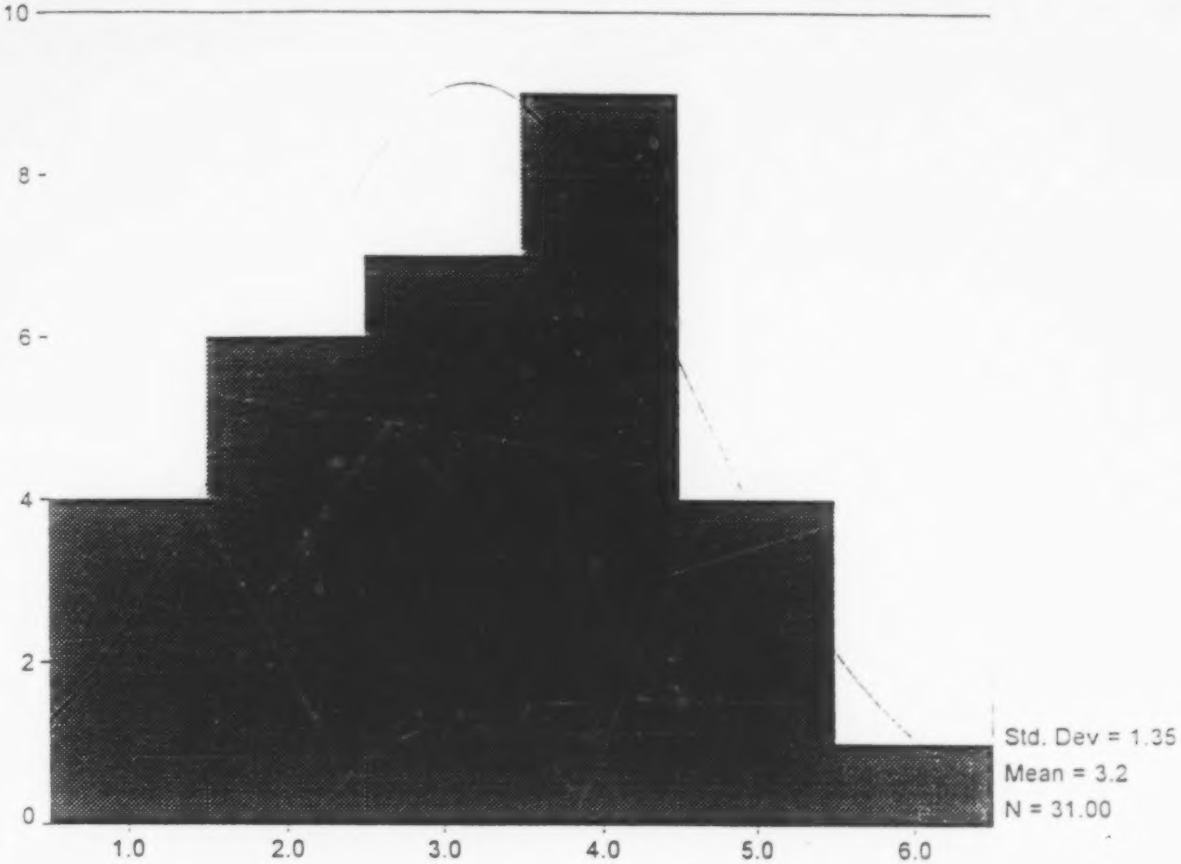
Figure XII
Distribution of 1992 NES Respondents' Ideology (California)



Value Label:
1. Extremely Liberal 2. Liberal 3. Weak Liberal 4. Moderate
5. Weak Conservative 6. Conservative 7. Extremely Conservative

Mean	4.075	Std err	.104
Mode	4.000	Std dev	1.477
Median	4.000	Variance	2.180

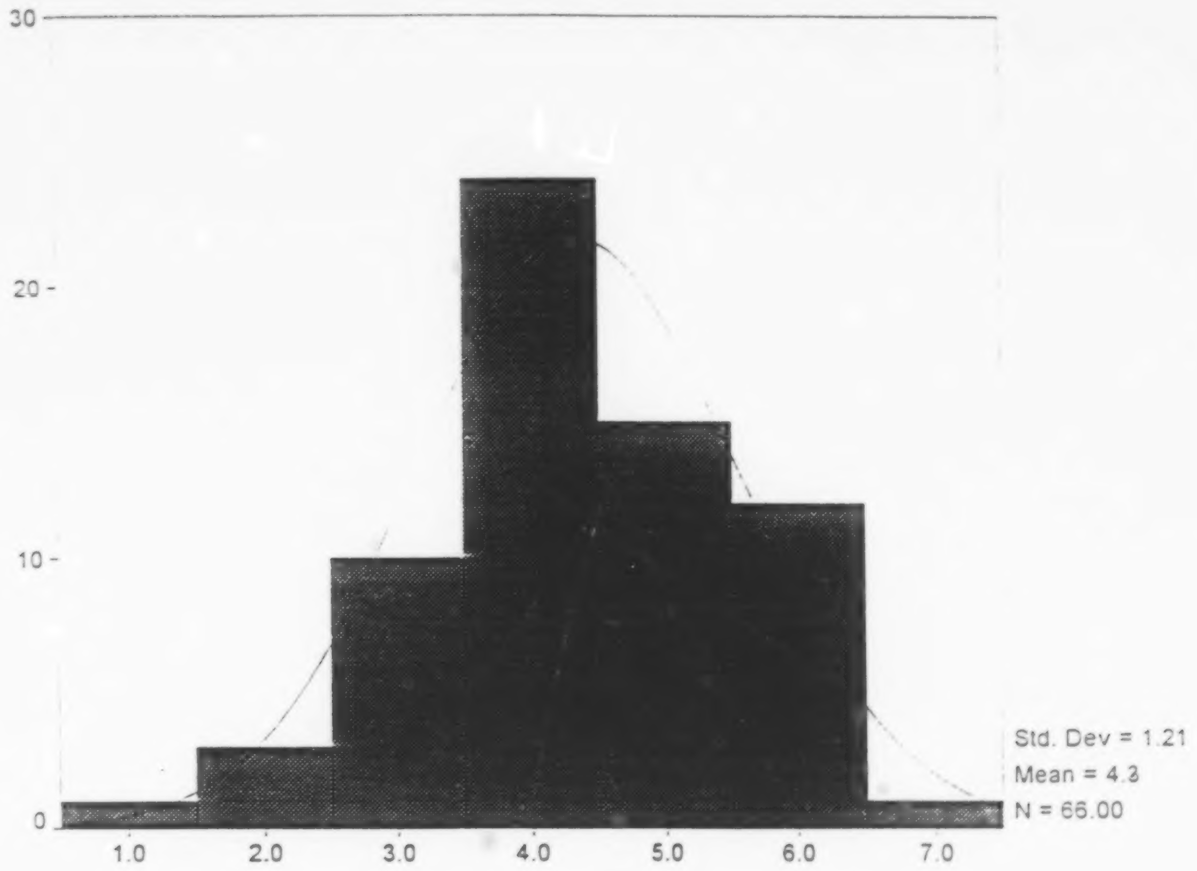
Figure XIII
Distribution of 1992 NES Respondents' Ideology (Colorado)



Value Label:
1. Extremely Liberal 2. Liberal 3. Weak Liberal 4. Moderate
5. Weak Conservative 6. Conservative 7. Extremely Conservative

Mean	3.194	Std err	.243
Mode	4.000	Std dev	1.352
Median	3.000	Variance	1.828

Figure XIV
Distribution of 1992 NES Respondents' Ideology (Florida)



Value Label:
1. Extremely Liberal 2. Liberal 3. Weak Liberal 4. Moderate
5. Weak Conservative 6. Conservative 7. Extremely Conservative

Mean	4.348	Std err	.149
Mode	4.000	Std dev	1.209
Median	4.000	Variance	1.461

The Role of the Self in the Third-Person Effect:
A View from Cognitive and Motivational Perspectives

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The Role of the Self in the Third-Person Effect: A View from Cognitive and Motivational Perspectives

Abstract

In considering the role of the self in the third-person effect, this paper proposes to conceptualize the self from a social psychological perspective. I argue that the conceptualization of self from motivational and cognitive perspectives is beneficial to understand the psychological processes underlying the third-person effect phenomenon. Accordingly, the self-concept, self-schemata and self-esteem mechanisms are discussed and their relationships with the third-person effect are examined.

The Role of the Self in the Third-Person Effect:
A View from Cognitive and Motivational Perspectives

In 1983, Davison (1983), based on the findings of four modest experiments, formulated the "third-person effect" hypothesis to indicate the disparity between the perceived effects of media content on oneself and on others. Davison (1983) suggested that individuals tend to overestimate the media effects on others and these exaggerated perceptions influence their behaviors. Over the past decade, this relatively new research domain has inspired a fruitful body of both experimental and survey research and demonstrated compelling evidence to support this third-person phenomenon.

Following Davison's proposition, a number of consequent research efforts have sought to explain the processes that underlie this effect (e.g. Cohen & David, 1991; Cohen, Mutz, Price & Gunther, 1988; Gunther & Mundy, 1993; Lasorsa, 1989; Perloff, 1989; Tiedge, Silverbltt, Havice & Rosenfeld, 1991;). They examined different contingent factors such as personal expertise, message attributes and source bias to determine the presence or absence of the third-person phenomenon. In other words, the third-person effect phenomenon is not universal. There are boundaries set for this effect to occur.

While a number of investigators have attempted to identify the contingent factors facilitating or deterring the occurrence of the third-person effect phenomenon, however, none of them has substantially looked at the role of the self in influencing the third-person effect. By looking at the term "third-person" per se, it explicitly indicates "them" rather than "me" or "you." However, Davison's (1983) third-person effect is not what the term nominally suggests as the effect on other people. Instead, it is an effect on an individual's attitude or action based on his/her "perceived" media effects on others. That is, people generally think that the media messages have impact on other people, but not "me." Since it is "me" who estimate the media effects on oneself and on others, the characteristics of "me" should be important to account for the generation of the third-person effect.

However, the question of who is "I" or "me" is not conceptually clarified in Davison's (1983) original formulation and other consequent studies. A review of prior research in this area reveals that past research efforts tended to define and measure the "me" and "third-person" in a seemingly simple way. In most studies, subjects were asked "how much do you think this news would influence your attitude toward the target?" and "how much do you think this news would influence other people's attitudes toward the target?" In this way, the question of "who is I" or the concept of the self has largely remained an unanalyzed concept in the third-person effect research.

Accordingly, the primary purpose of this paper is to examine the role of the self in the third-person effect. With the aim to elaborate the concept of self in the third-person effect and understand the role of self in influencing the occurrence of the third-person effect, this paper starts reviewing briefly the theoretical underpinnings of the third-person effect hypothesis, then examines the concept of the self relevant to the third-person effect from a social psychological perspective, in particular, with social cognitive and psychological motivational approaches. I argue that the conceptualization of the self from motivational and cognitive perspectives is beneficial to understand the psychological processes underlying the third-person effect phenomenon. For example, the motivation to preserve one's self-esteem or self-presentation, or the self-biasing motive is assumed to account for the psychological process underlying the third-person effect. In addition, the self-schemata (Markus, 1977) which refer to cognitive structures about self is assumed to account for the information-processing processes in the third-person effect. Besides examining the concept of self from cognitive and motivational perspectives, this paper also suggests some research directions considered essential to advance the understanding of the motivational and cognitive factors in influencing the occurrence or the magnitude of the third-person effect. It is hoped that the conceptualization of the self from cognitive and motivational perspectives could make a unique contribution to understanding how third-person effect is generated.

The Theoretical Underpinnings of the Third-Person Effect Hypothesis

According to Davison (1983, p.3), the third-person effect is generated not by the actual reactions of the audience toward the media messages, but, instead, by people's "perception" of how "third persons" will be affected. Davison's third-person conceptualization suggests that individuals tend to overestimate the impact of mass communications on the attitudes and behaviors of others and thus behave in accordance with their estimates of effects on others (Cohen and Davis, 1991; Perloff, 1989; Gunther, 1991). Therefore, there are several stages leading to the third-person effect. First, one examines the communication messages. Second, he/she estimates their effect on others and, most of the times, tends to overestimate the effect on others. And last, he/she reacts in response to the overestimation of effect on others.

Studies of the self-other differences in response to the media effect have proliferated since Davison's (1983) proposition. A great number of recent studies investigating various aspects of Davison's formulation have yielded consistent findings with Davison's (1983) third-person effect hypothesis. Most of them have demonstrated the discrepancy between perceptions of communication effect on others and on the self, such as effects of the mini-series "Amerika" (Lasorsa, 1989), the influence of negative political advertising (Cohen and Davis, 1991), news broadcasts of Middle East conflict (Perloff, 1989), effects of product commercials and public service announcements (Gunther and Thorson, 1992) and defamatory articles about prominent persons (Cohen et al., 1988).

While most of the empirical findings support the third-person effect, some scholars have further attempted to explain the processes by which this effect is generated. They found that the intensity of the third-person effect varies with the variety of audience attributes such as education, age, expertise, involvement and pre-existing attitudes and message characteristics such as message topic and media bias. The following is a discussion of those conditional determinants specified by previous research.

Expertise, Ego-Involvement, Disposition and I

With regards to the concept of "self," Davison (1983) suggested, although not tested, that "others do not have the information that enables me to form a correct opinion" (p. 11). He suggested that "we are all experts on those subjects that matter to us, in that we have information not available to other people" (p.9). He observed that "other people do not know what we know. Therefore, they are more likely to be influenced by the media." From this perspective, the notion of expertise serves as an intervening variable to increase or decrease the third-person effect.

Findings of research efforts have supported for the personal expertise explanation of third-person phenomenon. Lasorsa's (1989) survey study which examined the impact of the network television miniseries "America," a political fiction about life in the United States after a Soviet takeover, found that "perceived political knowledge rather than real political knowledge fuels the third-person effect." People who think they know more about politics are more likely to resist influence and perceive others as more affected by the media content.

Perloff's (1989) experimental study examined the impact of television news coverage of the 1982 Arab-Israeli war in Lebanon on his subjects themselves and on others. He hypothesized that pro-Israeli partisans would be more likely than pro-Palestinian partisans to perceive that the news coverage was biased against Jews and would cause the neutral audience to feel less favorably toward Israel and vice versa and concluded that "ego-involvement powerfully influences perceptions of communication effects" (p. 255).

In a similar vein, Cohen and Davis' (1991) experiment tested the relationship between one's disposition toward negative political advertising and the differential effects. They hypothesized that if the individual "accepted" the message, he would perceive that he would be affected, but not others. On the other hand, if he/she rejected the message, he/she would perceive that the message had no effect on him/herself, but on others. Their findings support the strong tie between personal disposition toward a message and personal attribution of whether the message will affect oneself or others.

Age, Eduction and I

In the line with the research assuming that expertise can magnify the discrepancy between perceived first-person and perceived third-person media effects, Tiedge et al. (1991) hypothesized that education would be positively related to the discrepancy between the perceived first-person and perceived third-person effects. They also tested if age would be positively related to the first-person effect or to the third-person effect. Their survey study found that individuals with higher education level reported themselves being not so much affected, but others more influenced. They suggested that higher educated people are more aware of the power of the media and thus view themselves less susceptible to such effects. However, this explanation cannot be applied to less educated people since their findings do not illustrate that less educated people have the reversed third-person effect.

What is interesting is the relationship between age and the discrepant perceptions. Tiedge et al.'s (1991) study suggests that older persons are more likely to feel that mass media influences them less than others. They explained that perhaps older people felt that they had alternative sources of information and viewed themselves as less dependent on media than younger people, thus minimizing the effects on the self and magnify the effects on others. However, their study did not investigate this explanation. The question of why older people tend to have the third-person effect remains unclarified.

Who is "I"?

Although the results of these empirical research strongly support the third-person effect hypothesis, a majority of researchers conducted experiments in which university undergraduates were asked to assess the relative effects of media messages on themselves and on other persons (e.g. Cohen et al., 1988;. Gunther, 1991; Gunther and Mundy, 1983; Gunther and Thorson,1992) with an exception of the study by Tiedge et al. (1991) who conducted a telephone survey in two midwestern cities asking respondents to judge the effects of media. In addition, most of research examined the relationship between the disparity of effects and demographic characteristics such as education and age. Thus, overall, with regard to the self, research in this area primarily focuses on the demographic or psychographic characteristics such as age, education, prior knowledge and prior attitudes. Moreover, the subjects used in most studies of this area were limited to undergraduate students. The individual differences in self-esteem motive and in other personality traits which are assumed to be essential to affect the occurrence or the magnitude of the third-person effect have never been empirically investigated.

Message Topic

The majority of the third-person effect studies have used the negative messages as the stimulus. Messages such as defamatory stories, negative political advertising and news coverage about the Middle East conflict are likely to lead the individuals to have the third-person effect. Gunther and Mundy's (1993) study illustrates that people estimate greater media effects on others than on themselves for messages with harmful outcomes, but no difference in effect for beneficial messages. In a similar vein, Gunther and Thorson (1992) found the third-person effect for advertisements, but not for public service announcements which are assumed to benefit the individual.

Thus, it appears that the third-person effect is likely to emerge when messages are perceived to advocate harmful outcomes and when the individual perceives that "it is not smart to be affected by that message" (Gunther & Thorson, 1992, p.61).

Media Bias

Studies manipulating the message sources have demonstrated a strong relationship between the perceived message source bias and the third-person effect. Perloff (1989) examined the third-person effect of news coverage of Middle East conflict between Israeli and Palestinians and concluded that individuals who perceived that the media reports were biased against their side tended to overestimate the impact that these reports exerted on third persons. The findings assemble to what Davison (1983) observed. Davison (1983) suggested that people on both sides of an issue can see the media as biased against their own point of view and then report "a disproportionate effect" generated by media coverage supporting the "wrong" side of the issue. Davison (1983) also observed that there is no third-person effect on the right side. He reasoned that maybe that is because the facts supporting the individual's opinion is not seen as persuasive, but merely a reinforcement. Thus, based on these findings, the third person effect is irrelevant to the positive or neutral news coverage.

In Gunther's (1991) study, the trustworthiness of the source of a defamatory newspaper article was manipulated to test the third person effect. Similarly, Cohen et al. (1988) varied intentions behind a message by attributing a defamatory story to a source either biased against or friendly toward the subject of the story. Both studies found that biased content would enhance the perceived media effect on others.

This concludes the review of the third-person effect research. At this point, I adopt a relatively different approach to theoretically explicate the role of the self in third-person effect hypothesis. I begin by addressing the speculation of the concept of self which has been widely explored by social psychologists and cognitive psychologists. Then, I analyze how the self from cognitive and motivational perspectives relate to the occurrence of the third-person effect, which have been overlooked by third-person effect theorists but may be important to understand the psychological and information-processing mechanisms underlying this phenomenon.

The Self: Theoretical Background

The notion of the self has been largely used and become conspicuous within the domain of social psychology: for example, within behaviorism via Bem's (1972) theory of self-attribution; within social learning theory via Bandura's (1977) focus on self-efficacy; and within cognitive dissonance theory via Aronson's (1968) and Bramel's (1968) reformulations. It is also increasingly evident in theories of attitude and value formation and change. Although the third-person effect hypothesis is one of the various recent theories about media's impact on attitudes and behaviors, research in this area and other areas of mass communication has not carefully examined this concept and its relationships with other communication effects.

With regard to the definition of the concept of the self, although it has occupied a central place within the domain of social psychology, to derive a fairly rigorous definition of self is a problem. The issues involved in such an analysis are complex and difficult, as anyone who has dabbled in the voluminous literature on this topic will attest to. As a result, there appear a number of ways to define this concept and its meaning seems to have no single, simple core as every scholar conceptualizes this construct in his/her own ways through different perspectives and uses. With the recognition of this problem, this paper focuses on the perspective of motivation and social cognition and discusses its appropriate literature relevant to the third-person effect hypothesis.

The Conceptualization of the "Self" and the Third-Person Effect

William James (1890 & 1892) who is generally identified as the earliest "self" psychologist is best known for the I-Me dichotomy in which he suggested that the total self could be divided into two "discriminated aspects"--the self as the knower and the self as that which is known, or the agent of experience and the contents of experience (Wells, 1976, p.14). Although most psychologists view the self as an "active" agent seeking knowledge, materials and identities, I argue that, in the third-person effect hypothesis, the self assumably is an object, not an active agent; a content of what is known, not a knower.

In the third-person effect studies, when individuals are asked to estimate the media message effects on themselves and on others, they are actually comparing what they know to what others know, and, thus, comparing the content of the self--"Me"-- to other people. During the process of comparison, individuals view themselves as an object, not as an active behavioral agent. The message effect on oneself is based on the content of what is known about the self or the content of experience.

Cooley (1902) who is the next major figure dealing with the idea of self examined the idea of self from a more sociological perspective. Cooley sought to emphasize the continuity of the individual with society and suggested that the self could not be separated from the social milieu in which he/she is imbedded or he/she interacts with other persons. In addition, Wells (1976) notes that Cooley is perhaps best known for his notion of the looking-glass self, which postulates that an individual's conception of him/herself is determined by perception of other people's reactions to him or her.

Cooley's notion that the sense of self always involves a sense of other people could be applied to explain the aspect of comparison implied by third-person effect phenomenon. Without comparison, third-person effect cannot occur since the magnitude of the third-person effect is measured by the discrepancy between the estimated effects on the self and on other persons. Furthermore, the comparison of media effects on oneself and on others has to be based on the individual's social interaction. The third-person effect hypothesis has to assume that people socially interact with one another and thus can estimate the effects on other persons such as family, peers, community residents and general public. Without the sense of other persons, individuals are unable to estimate the message effects on other persons.

Following James and Cooley, Wells (1976, p. 17) suggested that Mead (1934 & 1956) proposed what is considered the most cogent and systematic statement of the development of the self. Like James, Mead saw the essence of the self in the I-Me distinction. Like Cooley, Mead viewed the self as a social phenomenon. Mead (1934 & 1956) identified the self as symbol-using or symbol-dependent process. Mead postulated that, through the use of language and over the course of experience and maturation, the person develops "the ability to take the role not only of a specific other person with respect to himself, but of a groups of others--real or inferred--which correspond to the society's representations within the individual" (Wells, 1976, p. 17).

Mead (1981) treated the self as a social object and emphasized the social process by which the self is generated. In line with social interactionism, he proposed that individuals should take an objective, impersonal attitude toward him/herself. He/she has to first become an object to him/herself by taking the attitude of other individuals toward him/herself within a social environment or context of experience and behavior in which both he/she and they are involved. The self is essentially a social structure, and it arises in social experience. Thus, the structure of the complete self is thus a reflection of the complete social process.

In the third-person effect, when the subjects are asked to estimate the effects of the media messages on themselves and on other people, they should treat themselves as an "object" to compare themselves to others. The self in these studies is not a process, but a "product" as "a physical, social and spiritual or moral being" (Gecas, 1982, p.3). In addition, Mead's postulation of viewing the self as a social object emerging from interactions with others can be applied to the comparison process between oneself and others in the third-person effect. When individuals are asked to estimate the message effects on different others such as "Stanford students," "Californians" and general public, they imaginatively locate the different "others" along the continuum and distinguish the social roles the different "others" represent in the individual's mind.

Distinguishing the different social roles of others is an essential step in the third-person effect hypothesis. Through this process, the individual asks him/herself "how much information this social group is supposed to have or how competent this social group is supposed to be to discern the persuasiveness of the message?" The impact of the perception of different roles for different others or different social groups on the third-person effect is supported by Cohen, Mutz, Price and Gunther' (1988) and Cohen and Davis' (1991) studies which demonstrated that the third-person effect mitigated or magnified as the "others" differed. In their experiment, the "others" included "other Stanford students," "other Californians" and "public opinion at large." They found that the third-person effect increased as the "others" became more distant or remote to the message-receivers or evaluators. During the effect estimation process, the message receivers estimate the media effect on others based on the roles or social representations of different others within him/herself.

The Sociological and Psychological Approaches to the Self

With regard to the self-concept, there are two traditions regarding the development of the self-concept: sociological tradition and psychological tradition (Gecas, 1982). Sociology tends to focus on the antecedents of self-conceptions and typically examines the self-concept within patterns of social interaction. On the other hand, psychology tends to focus on the consequences of self-conceptions, particularly those related to behavior. In other words, the former looks for the causes of behavior outside the individual--for example, culture, social structure, or social situation, while the latter looks for an apparently "internal" view of the causes of behavior--for example, motivation. This paper adopts the psychological approach to address the role of the self in the third-person effect by examining the "internal" aspect of the causes of behavior. However, it does not mean that other cultural or social factors which may affect the intensity of third-person effect are unimportant. Instead, so far, the social influence or cultural influence on the occurrence of the third-person effect has been ignored by scholars in this area and deserve future attention.

Sociologists typically define the self-concept as the total set of beliefs about and attitudes toward the self as an object of reflection (Gecas, 1982; Rosenberg, 1979, see Morgan & Schwalbe, 1990). For example, Rosenberg (1979) defined the self-concept broadly as "the totality of an individual's thoughts and feelings having reference to himself as an object" (p.7). Turner (1968) proposed a more specific definition: "a felt idea of what I am like in my best moments, of what I am striving toward and have some encouragement of believe I can achieve, or of what I can do when the situation supplies incentives of unqualified effort" (p. 98).

Moreover, Epstein (1973) offered a relatively novel conceptualization. He suggested that the self-concept can be viewed as "a theory that a person holds about himself as an experiencing, functioning being in interaction with the world." Epstein's formulation emphasizes the interaction with the world rather than values, attitudes, and motivations. Thus, Epstein's ideas for the self-concept are compatible with Mead's sociological formulations.

Concerning the psychological perspective on the self-definition, there are two dimensions. One focuses on the psychological processes through which changes in self-definition are accomplished. Some scholars suggest that changes in self-definition are the result of cognitive/perceptual processes. The other dimension argues that changes in self-definition are the result of motivational processes (Tesser & Campbell, 1982).

Similar to this classification, Morgan and Schwalbe (1990) propose two different social-cognitive approaches to the self-concept: the more cognitive view of American students of social cognition and the more social view of their European counterparts.

American approach to the self focuses on the construct of schemas which refers to the representational structures into which memory is organized during the information-processing processes. In the American social cognition approach, the analog to the self-concept is a set of self-schemas which refer to the framework for organizing knowledge about some aspects of the self. The self-concept thus can be regarded as consisting of a structured set of such schemas-- organized knowledge about aspects of the self that are organized in turn into a larger framework comprising all knowledge about the self (Fiske and Taylor, 1984, pp. 154-159; Markus, 1977; Markus and Sentis, 1982).

Self-schemas are used more often to summarize the self in terms of traits (e.g. independence vs. dependence). A person who is schematic in a given domain of self usually will be able to perceive and assimilate information related to this domain more quickly than information related to some nonschematized domain (Morgan & Schwalbe, 1990, p. 155). According to this cognitive approach, self-schemas guide the perception and processing of new information.

Compared to the American version of social cognition, the European stream of social cognition treats the self-concept as a special kind of representation: of the self to the self. The social representations perspective suggests that we consider how representations of "the self," of "selves," and of "types of selves" are genuinely social--that is, products of collective image construction (Morgan & Schwalbe, 1990, p. 156). That approach emphasizes that groups collectively develop ways of thinking about these things and the ways shape in turn how individuals can think about themselves (Morgan & Schwalbe, 1990).

Although both American and European approaches have proposed proper speculations about the concept of self, this paper will adopt the American approach to discuss the role of the self in the third-person effect by focusing on the intra-personal processes. There are two reasons. First, the third-person effect is considered as a result of individual judgment about the media effects on the self and on others. During this judgmental process, the social or cultural influence is not manifest or well-known. Second, although social or cultural differences may have differential impacts on the occurrence of the third-person effect, that is, social or cultural factors may influence the perception of the stimulus or of persons, the third-person effect theorists, so far, has not examined this aspect. The following is the discussion of the self from the motivational and cognitive perspectives.

The Impact of Motivation on the Third-Person Effect

This section will focus on the major motive related to the self-concept: the self-esteem or self-enhancement motive or self-serving bias. While self-enhancement emphasizes "growth, expansion, and increasing one's self-esteem," self-maintenance focuses on "not losing what one has" (Gecas, 1982, p.21). Anyway, all these terms refer to the human motive to preserve a positive self. The exploration of this motive is considered to help clarify the underlying psychological processes by which individuals tend to overestimate the effects of persuasive messages on others or underestimate the effects on themselves.

Many forms of motivational influence have been proposed to account for different psychological theories, which include self-efficacy, effectance motivation, ego-protective impulses, need to control and so on. The following is a discussion of self-esteem motive which has been considered highly relevant to the occurrence of the third-person effect research (Gunther, 1991).

Self-Esteem Motive and the Third-Person Effect

Self-esteem deals with the evaluative and affective dimensions of the self-concept (Wells, 1976; Shibutani, 1961). Most research on the self-concept focuses on this aspect, so that sometimes self-concept is equated with self-esteem (Wells, 1976). As Gecas (1982) interpreted, "the predominance of this aspect of self-concept is the motivation significance of self-esteem" (p.4).

In much of the relevant literature, self-esteem refers to an individual's overall self-evaluation (Gecas, 1982, p.5). Gradually, this concept has been elaborated and, as a result, various aspects of self-esteem have been differentiated, for example, sense of power and sense of worth (Gecas, 1971); "inner" and "outer" self-esteem (Franks & Marolla, 1976); evaluation and affection (Wells, 1976); sense of competence and self-worth (Smith, 1978); self-evaluation and self-worth (Brissett, 1972); and competence and morality (Rokeach, 1973; Vallacher, 1980; Hales, 1980). Other related terms might include labels such as self-love, self-confidence, self-respect, self-acceptance, self-satisfaction, self-evaluation, self-appraisal, personal efficacy, self-ideal congruence, and ego or ego-strength (Wells, 1976, p. 7).

Based on these different interpretations about self-esteem, Gecas (1982) observed the distinction between (a) self-esteem based on a sense of power, competence, or efficacy and (b) self-esteem based on a sense of virtue or moral worth. These two types function differently and constitute different source of motivation. Since the comparison between the media effects on the self and on others is associated with personal expertise, knowledge, and ability, the self-esteem in the third-person effect appears to refer to the competency-based self-esteem.

The widespread current use of self-esteem can be easily demonstrated. Wells (1976) pointed out that self-esteem has been a variable of interest in a number of areas such as conformity (Gergen and Bauer, 1967), responses to threat, or stress (Schalon, 1968), dishonest behavior, (Aronson and Mettee, 1968), social participation (Coombs, 1969), competitive behavior (Graf and Hearne, 1970), interpersonal attraction (Leonard, 1973), group attraction (Dittes, 1959), cognitive dissonance (Cooper and Duncan, 1971;Greenwald and Ronis, 1978), equity-maintenance (Pepitone et al., 1967), attitude change and persuasibility (Silverman et al., 1966), helping and help-seeking behavior (McMillen and Reynolds, 1969), and causal attribution (Fitch, 1970).

With regard to the self-esteem motive and cognitive dissonance, Greenwald and Ronis (1978) argued that "the motivational force in the present versions of dissonance theory has much more of an ego-defensive character...The theory seems now to be focused on cognitive changes occurring in the service of ego defense, or self-esteem maintenance, rather than in the interest of preserving psychological consistency" (p. 54-55).

In a similar vein, Rokeach (1979) viewed the inquiry of the attitude or behavior change as being related to the question that how changes affect on the self. He also located the motivating mechanism in the discrepancy between a cognitive or behavioral element and the person's self-conception. He pointed out that such discrepancies were motivating because they threatened self-maintenance and self-enhancement.

Within attribution theory, the self-esteem motive is manifest in discussions of self-serving bias in attribution process (Bradley, 1978; Arkin et al., 1980; Bowerman, 1978). The bias is the tendency of individuals to take credit for positive outcomes, but to deny responsibility for negative consequences (Ross & Fletcher, 1985). A number of studies have related attribution to self-esteem and revealed strong support for the operation of self-serving, or defensive, causal attributions (a review for these studies, see Bradley, 1978).

Within the third-person effect framework, this self-esteem motive in the general tendency to distort reality in the service of maintaining a positive self-conception is manifest. When the individuals are asked to estimate the effects of media messages on themselves and on other people, they are actually evaluating themselves--their ability and knowledge to discern the media bias. Accordingly, they tend to overstate the discrepancy between the perceived media effects on selves and the perceived effects on others in order to maintain their self-esteem.

This paper thus proposes two ways or routes that individuals use to maintain their self-esteem and by which individuals either overestimate media effects on others or underestimate media effects on themselves. First, when the individual is processing the media messages, if the cognitive activities center on the uniqueness or superiority of the self, the underestimation of media effects on oneself will occur. In other words, during the information processing processes, the individual keeps thinking that "I am knowledgeable and capable to discern that bias of the media coverage and thus resistant to the media influence." If he/she admits that the effect of a biased, or negative, message on him/herself is stronger than the impact on other people, this confession will threaten his/her self-maintenance by implying that he/she does not have the ability to judge the right or wrong and he/she is inferior than other people. In this way, the self-esteem motive distorts individuals' perceptions and cognitions, resulting in underestimation of message effects on themselves.

Second, the individuals may distort their perceptions or cognitions by de-evaluating other people's abilities or knowledge. In other words, the information-processing processes focus on other people's ability or knowledge. Upon being asked to estimate the message effects on others, individuals could think that general audience is passive, gullible and manipulable; thus, resulting in the overestimation of message effects on others.

However, so far, third-person effect research has not figured out if the third-person effect comes from the overestimation of message effects on others or comes from the underestimation of message effects on the self. It is likely that these two processes are not dichotomous, but can co-occur when individuals are estimating the effects. However, which process or route predominates over the other is not clearly known yet.

In addition, although the third-person effect researchers recognize the role of motivation playing in the third-person effect (Gunther, 1991) and suggest that it can be "a self-serving, motivated bias that reinforces an observer's self-esteem" (Gunther, 1991, p. 357), there is no empirical evidence to support this reasoning. So far, no researcher has measured subjects' self-esteem and examined its relationship with the third-person effect.

Cognitive Perspective of the Self: Self-Schemas

A number of theorists has proposed a cognitive view of the self. For example, Sarbin (1954), Kelly (1955), Epstein (1973) and more recently Markus (1977) have explicitly considered the self as a cognitive structure or set of structures that organize, modify, and integrate functions of the person.

The idea that the self provides a standard for our perceptions is an extremely prevalent assumption of various psychology studies. Sherif and Hovland (1961), for example, repeatedly demonstrated that one's own stand on an important issues had a marked impact on how one interpreted the responses of others to that issue. Goldings (1954) reported that perception of the happiness of others was positively related to one's own reported level of happiness.

Underlying the idea that the self provides a standard for our perceptions is the assumption that the self is the center of the perceptual or cognitive field and it functions as an anchor for judgments. As Markus and Smith (1981,) suggested, "the self is a central force, the main anchor, or the first structure through which all stimulus information is initially processed" (p.235).

One highly accessible internal structure that influences the information processing, or that is used in organizing, categorizing, or interpreting information is one's "self-structure" (Markus & Smith, 1981, p. 234). The self-structure has been broadly implicated in the studies on social comparison theory, attribution theory and personality assessment. Construed in the most general sense, the question of the impact of the self on the perception refers to how the individual's thought, feelings, attributes, attitudes, and cognitive structures influence the perception. The issue of concern in this paper is the question of how the self-structure, which is comprised of thoughts and feelings about the self in particular domains, influences the individual's social information processing and judgments in those domains.

The author argues that social psychologists' proposition that the cognitive organization of one's self-knowledge or self-structure influences the processing of social information can be applied to account for the third-person effect phenomenon. Individuals' self-schemata (Markus, 1977)--the cognitive structures about the information about oneself-- or individual's feelings toward themselves should influence the message effect estimation process. The following is a discussion of the cognitive view of the self.

Schema

According to one broad and generally accepted definition, a schema is an "abstract, general structure that establishes relations between specific events or entities" (Hastie, 1981, p.41). Another definition describes schemas as "cognitive structures of organized prior knowledge, abstracted from experience with specific instances" (Fiske & Linville, 1980, p. 543). In addition, Landman and Manis (1983) suggested three principle features of schemas: (1) schemas are cognitive structures; (2) schemas represent both general specific knowledge, in a single higher-order unit; and (3) schemas have an impact on cognitive processing. Of which, the third feature is addressed in this paper because it is assumed that schemas have an impact on individuals' media-information processing and estimation of the effects on themselves and on others.

Taylor and Crocker (1981) concluded that schemas enabled people to "process some information faster and other information in more depth" (p. 103). This explanation in processing time centers on possible differences in the nature of the processing elicited by different kinds of information. Taylor and Crocker (1981) hypothesized that information that was redundant, central, affectively neutral, and/or evaluatively consistent with a schema might undergo faster, automatic processing. Conversely, novel, peripheral, affectively charged, and/or evaluatively inconsistent information might be processed more deeply and more slowly through controlled processing. Applying Taylor and Crocker's (1981) hypothesis, the author suggests that individuals should estimate the media effects on themselves faster than the media effects on others, particularly when the content of media messages contain some features considered central and made salient to the message receivers or when the content corresponds to the receivers' schemas activated at that time.

Accordingly, it is suggested that individuals not only overestimate the message effects on others, or underestimate effects on themselves, as Davison's (1983) third-person effect hypothesis suggested, but also estimate the message effects on themselves "faster" than on others. In addition, when the issue is highly salient or important to the message recipients/evaluators, or when the issue is in the recipients' expertise domain, individuals are likely to process the media messages faster or more automatically and less deeply. In this case, stereotypic thinking is likely to occur. Individuals are thus likely to rely on simple cues to make decisions. The stereotype activated during the information processing about general people who are generally viewed as being passive and gullible results in the larger disparity between the estimated media effects on the self and on others. Although this reasoning is consistent with previous findings suggesting that knowledge can increase the magnitude of third-person effect, but the question of whether experts process information relevant to their expertise faster and less deeply and estimate the effects on both themselves and others faster than novices requires further investigations and deserves future attention.

Self-Schemata and the Third-Person Effect

The concept of self-schemata is relatively new in social psychology. In 1977, Markus suggested that internal cognitive structures which allowed the individual to process the information can apparently influence the processing of information about ourselves. She therefore developed this construct called "self-schemata" which was defined as "cognitive generalizations about the self, derived from past experience, that organize and guide the processing of self-related information contained in the individual's social experiences." Since that, she and her associates have published numerous studies to measure individual differences in schematic structuring and processing.

In Markus and Smith's 1981 study, they elaborated the definition of the self-schemata and related this construct to a particular domain of behavior and the concept of others. They defined it as "generalizations or theories about the self, developed from the repeated similar categorization and evaluation of behavior by oneself and others, that result in a clearly differentiated idea of the kind of person one is with respect to a particular domain of behavior" (p. 240).

According to Markus (1977), self-schemata include cognitive representations derived from specific events and situations involving the individual (e.g. "I hesitated before speaking in yesterday's discussion because I wasn't sure I was right, only to hear someone else make the same point") as well as more general representations derived from the repeated categorization and subsequent evaluation of the person's behavior by himself and by others around him (e.g. I am very talkative in groups of three or four, but shy in large gatherings," "I am generous," "I am creative," or "I am independent").

Markus (1977) found that self-schemata facilitated the processing of information about the self, contained easily-retrievable behavioral evidence and provided a basis for confident self-prediction of behavior on schema-related dimensions. For example, individuals who think of themselves as "independent" endorse significantly more adjectives associated with the concept of independence than individuals who do not characterize themselves this way. In addition, these people require shorter processing time for making judgments about words concerned with independence than about other types of words and they are also able to provide relatively more specific examples of independent behavior and report they are likely to engage in future independent behavior (Markus, 1977).

Markus (1977) classified subjects into groups that differed along the dimensions of independence-dependence, individualist-conformist, and leader-follower. Based on the content of their self-descriptions and the importance they attached to such traits, Markus distinguished those, she called "schematics," for whom these traits were considered important from those, she called "aschematics," for whom these dimensions were not important.

Markus (1977) found that people classified as schematics categorized themselves more quickly on schema-consistent dimensions than on schema-inconsistent or irrelevant dimensions, and that schematics were able to list more examples of schema-consistent behaviors than aschematics. These results demonstrate the impact of self-schemas on cognitive processing. Similar results were obtained in a subsequent study using the Bem Sex Role Inventory to differentiate schematics from aschematics on the dimension of gender identification (Markus, Crane, Bernstein, & Siladi, 1982).

In the area of the third-person effect, so far, none of the research has examined the impact of self-schemata on the dimensions of independence/dependence, leader/follower, and individualistic/conformist on the media message processing or on the effect estimation processes. Most of the third-person effect studies have provided supportive evidence about the impact of education on the magnitude of the third-person effect. Applying the mechanisms of self-schemata specified by Markus to account for the third-person effect, we can explain that higher educated people characterize themselves as experts or being more intelligent, thus when they are asked to estimate the relative media effects on themselves and on others, their self-schemata on intelligence or other expertise domains are activated to process the information. As a result, they tend to overstate the difference between the perceived media effects on themselves and on others. However, although previous studies demonstrated that the magnitude of the third-person effect was positively correlated to education or knowledge, the question of what higher-educated people or experts think about themselves while processing information and estimating message effects remains unanswered. Do they think of themselves as experts? What dimensions of self-schemata are activated when they process the media messages and estimate the relative effects on themselves and on others? How these different dimensions of self-schemata affect the occurrence or the magnitude of the third-person effect? These questions have not yet been examined in this area and require further inquiry.

Moreover, Markus (1977) noted that self-schemata could facilitate the information processing about self on schema-related dimensions. Accordingly, we can hypothesize that, in the third-person effect, higher-educated persons or experts require shorter processing time for making the judgments in the domain of their specificality. In addition, they think themselves more likely to engage in future intellectual behaviors, resulting in the perception of knowledge accumulation. This perception of increasing knowledge gap between themselves and other ordinary people is likely to exert an addictive impact on the disparity between the perceived media effects on themselves and on others. Further studies are needed to test these assumptions.

Moreover, since individuals prefer to be perceived to own some traits they consider important or unique to identify themselves, they tend to perceive others or tend to think about others in self-schemata relevant domains (Markus & Smith, 1981). In other words, the schema provides a framework with which stimulus input can be interpreted. Without this framework, certain aspects of the stimulus may not be attended to at all. Thus, a person who is aschematic with respect to media bias may not notice the bias revealed in the media coverage and, as a result, the third-person effect cannot occur. Moreover, individuals usually develop self-schemata in those areas that are important to them and about which they have strong preferences (Markus & Smith, 1981). If an individual views independence as an important trait, he/she is likely to use this trait to evaluate other people than aschematics. Accordingly, in the third-person effect, individuals who are experts in their schematic domains use their expertise as an criterion to judge other people's ability or performance. During the information processing, their schematic trait--expertise--is made salient and, as a result, they can respond faster and are quite confident of their judgments. Comparatively, unless the person to-be-perceived is viewed as an expert, he/she will be evaluated less favorably in the schematic domains.

Conclusion

In considering the role of the self in the third-person effect, this paper proposes to conceptualize the self from a social psychological perspective. The approach outlined in this paper emphasizes the motivational and cognitive aspects of the self. The author argues that the conceptualization of the self from this perspective is beneficial to understand the psychological mechanisms underlying the third-person effect phenomenon.

Although previous third-person effect studies, with an attempt to explain the processes by which this effect is generated, have examined the influence of various contingent variables on the occurrence of the third-person effect, these factors are limited to explain the differences between the perceived media effects on the self and on others. The processes by which these factors affect the media message perception or person perception (both self-perception and others-perception) still remain unclarified.

This paper thus examines the roles of self-concept, self-schemata and self-esteem in influencing the occurrence or the magnitude of the third-person effect. It is suggested that the self during the media effect estimation process is viewed as an object, not an active agent; a content of what is known, not a knower. Also, the concept of the self is based on the interactions with other people or with the world. Without social interaction, third-person effect is unlikely to occur.

Furthermore, the author suggests two ways individuals use to maintain their self-esteem and these two ways can shed some light on whether the third-person effect results from overestimation of media effects on others or from underestimation of media effects on the self. During the information processing, if the cognitive activities focus on the uniqueness of the self, individuals tend to underestimate media effects on themselves. If the cognitive activities focus on other people's ability or knowledge, individuals tend to overestimate the media effects on other people. It is emphasized that these two processes are not dichotomous. Actually, they can co-occur, but future research may look at which process dominates over the other, resulting in the overestimation or underestimation of media effects.

This paper also suggests to apply Markus' concept of self-schemata to account for the formation of the third-person effect. Scholars suggest that self-schemata provide a framework with which stimulus input can be interpreted and facilitate information processing about the self. Third-person effect theorists have never examined "what is me." The process by which the individual's thought and feelings about him/herself in particular domains influence his/her media message processing and decision making has been overlooked by third-person effect theorists.

Based on the arguments presented in this paper, it is notable that research dealing with the third-person effect requires to take a step further to examine the role of the self in influencing the occurrence or the magnitude of the third-person effect. To conclude, this paper proposes that research could proceed in the following directions:

1. Future research could look at the relationship between various personality traits and the third-person effect: what type of personality is more likely to lead to the overstated difference between media effects on the self and on others. Previous studies have proposed the self-esteem motive, but this motive has never been empirically examined. Also, some other personality traits such as social desirability, sense of morality and self-efficacy could be explored.

2. Future research could compare the processing time higher educated people require to estimate the media effects on themselves to the time they require on others: Whether they require shorter processing time for making the judgments about themselves than on others. In addition, future research could compare different processing times highly-educated people or experts require to estimate media effects on different others--campus students, state residents, community, and general public. The processing time required is assumed to increase as the target becomes more distant or remote to evaluators.

3. Future research could compare the processing times used by higher educated people or experts and by lower educated people or novices to estimate the media effects on both themselves and on others. This paper suggests that experts should require less time to make estimation judgments than novices if the content of media message is within the domain of expertise.

4. Future research could look at the different dimensions of self-schemata and examine how these various dimensions interact with the occurrence or the magnitude of the third-person effect. Markus and her associates focus on the dimensions of independence, creativity and leadership. Future research could expand these dimensions. In addition, although previous studies found that the third-person effect is more likely to occur if the media message is negative with harmful outcomes, it is likely that different dimensions of self-schemata make individuals sensitive to different types of media messages or make them more attentive to some certain aspects of the media content. Thus, future research may look at how different dimensions of self-schemata interact with different types of media content in leading to the third-person effect.

5. Although the social or cultural influence on the perceptions of media content and different persons is not the major concern of this paper, social or cultural differences may differentially affect the occurrence or the intensity of the third-person effect. Future research could conduct a cross-cultural study to examine if the same media content results in different magnitudes of the third-person effect across cultures. In addition, with the recognition of the fact that the same person may be perceived differently across cultures, future research may examine if the different perceptions of the same "others" across cultures result in different magnitudes of the third-person effect.

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Community Newspapers, Community Pluralism and the Local Impact of Non-local Groups

Paper submitted to the
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Community Newspapers, Community Pluralism and the Local Impact of Non-local Groups

Abstract

This paper provides an analysis of local newspaper coverage of community controversies involving non-local groups such as state and federal agencies. This study extends the conflict model by demonstrating that newspapers from less pluralistic communities not only report less internal conflict, but also report a larger proportion of conflict that involves non-local groups. As the larger society has become more complex, conflict of all types has increased, particularly conflict with state-level agencies.

Community Newspapers, Community Pluralism and the Local Impact of Non-local Groups

The relationships among localities, states and the federal government has been the topic of recent political debates. The legislative agenda of the new Republican majority included items designed to simplify government and return power to the states. From the perspective of community leaders, however, the regulatory structure steadily grown in complexity during the past 30 years. Conflict emerges as community leaders grapple with state and federal rules and mandates while attempting to solve routine community problems.

This paper provides an analysis of local newspaper coverage of controversies involving non-local groups. In general, local newspapers tend to report controversy in such a way as to contribute to its control. An analysis of newspaper content would reveal the extent to which community leaders define local problems as having non-local causes or solutions. Local newspapers are integral parts of the community structure that reflect the concerns of powerful groups within the community, and that reflect both the internal and the external dynamics affecting the community.

Changes in Non-local Government

During the past 30 years, the balance of responsibility for many rules affecting communities has shifted from the federal level to the state level. Since the Johnson administration, federal regulatory agencies have been dismantled as state-level bureaucracies have grown. The Reagan administration was particularly aggressive in returning power to the states through the policy of "New Federalism".

The 'unfunded mandate' and welfare reform legislation of the newly elected Republican majority can be seen as part of a larger trend towards a redefinition of the role and power of non-local governments. State and local governments are growing in bureaucratic complexity, while the federal government continues to have influence. The complexity of the overall regulatory environment has grown as national standards are replaced by a multitude of state and local standards. The growing complexity of the social and political system is expected to result in an increase in conflict as different parties work out their new responsibilities.

Community Media and Community Conflict

Generally, conflict appears in the local mass media when that conflict has been initiated by community leaders. Previous studies have shown that newspapers in larger, more complex communities tend to have more stories about social conflict than newspapers in smaller communities.[1] Over time, as the social system as a whole becomes more complex, the amount of conflict reported in local newspapers increased as well, regardless of the size of the community.[2]

The differences between small town newspapers and big city newspapers regarding conflict reporting illustrates the social maintenance role of the newspaper in both types of communities. Local mass media serve a social maintenance role that is supportive of community norms and social arrangements.[3] Given the maintenance role of local newspapers, little of the conflict appearing in the paper would be initiated by the paper itself. In the larger, more complex community, conflict is controlled through the open expression of grievances, criticisms, and disagreements. Newspapers in the larger community play a key role in conflict resolution as participants debate through the press. Larger, more pluralistic communities have a greater density of interaction and a more diverse set of groups competing for power and influence. Conflict in the more complex community is controlled via formal, 'pressure valve' mechanisms such as public hearings, grievance procedures, and citizen review boards, all of which are extensively covered by the local press.[4]

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[1] Lewis Coser, The Function of Social Conflict (Glencoe, Ill: Free Press, 1956).

[2] C.N. Olien, G.A. Donohue, P.J. Tichenor, "Community Editor's Power and the Reporting of Conflict," Journalism Quarterly, 47:472-78 (1968).

In smaller, less pluralistic communities, an open and public expression of differences may be disruptive to the normal functioning of the community. Instead, differences tend to be settled behind closed doors, and decisions tend to be announced in the local newspaper. The pages of the small town newspaper contain fewer accounts of the process leading up to decisions. Instead, the newspaper will create the appearance of consensus within the community. This is not necessarily because of an active suppression of conflict on the part of newspaper editors. Rather, it is more likely to be the result of the public officials' unwillingness to be quoted until differences are settled. The community social structure affects both the decision-making process and the newspaper's reporting of that process.

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[3] G. A. Donohue, P.J. Tichenor, and C.N. Olien, "Mass media Functions, Knowledge and Social Control," Journalism Quarterly, 50:652-659 (Winter, 1973).

[4] Ibid.

Although conflict among internal groups may be disruptive to the functioning of a small community, conflict between community leaders and outside groups may serve to enhance local solidarity and to rally the community against a common 'enemy'.

Internal Conflict and Conflict with Non-local Groups

Earlier studies of newspaper reporting of community conflict dealt primarily with conflict among community groups. This study extends the conflict model to include a consideration of newspaper stories about conflict with non-local groups such as state and federal agencies. As the larger society has become more complex, it is expected that non-local groups would be a growing source of community conflict. Conflict is expected to accompany deregulatory efforts to pass responsibility and power from federal to state and local levels of government.

County and local governmental officials would be expected to be acutely aware of the impact of the changing regulatory environment facing a community. As society has grown in complexity, large-scale, bureaucratically-organized groups headquartered outside of the community have become more influential in a wide range of community issues.[5] These changes may result in conflict as the local leaders criticize 'unfunded mandates' and other forms of regulation that adversely affect the community.

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[5] W.E. Moore, Social Change (Englewood Cliffs, N.J.: Prentice Hall, 1963); G.A. Donohue, "Major Trends in Rural America," Sociology of Rural Life, 8(4):1-2,7 (Summer, Fall, 1986); Roland Warren, "The Theory and Strategy of Community Development," American Journal of Agricultural Economics, 50:1,226-38 (1970), cited in Bert Ellenbogen, "Service Structure of the Small Community" in North Central Regional Center for Rural Development, Communities Left Behind: Alternatives for Development (Ames: Iowa State University Press, 1974), pp. 82-90.

Community newspapers would contain accounts of these clashes between local and non-local powers as part of its regular coverage of local government. In addition, editorials or letters to the editor could contain mention of non-local groups.

Over time, as the social system as a whole becomes more complex, there would be a greater level of all types of conflict appearing in newspapers.[6] Conflicts mentioning outside groups would also be expected to increase as the social system becomes more pluralistic. The amount of conflict with non-local groups is just one indicator of what is expected to be a greater level of all types of interaction between the community and the increasingly complex outside world.[7]

The impact of the increasing complexity of non-local government would be greatest in smaller, less pluralistic communities. These types of communities receive a larger proportion of their local funding from state and federal sources, and lack the economic diversification needed to buffer against the policies of non-local groups.

In the larger, more pluralistic communities, the boundaries between local and non-local groups are less distinct. Metropolitan areas are often the headquarters of national and international organizations, or contain the corporate offices of businesses serving wide areas. Highly pluralistic communities also contain a highly mobile and cosmopolitan populace with extensive ties to the world outside the community.

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[6] George A. Donohue, Clarice N. Olien and Phillip J. Tichenor, "Reporting Conflict by Pluralism, Newspaper Type and Ownership," Journalism Quarterly 62: 489-499, 507 (Autumn, 1985); G.A. Donohue, C.N. Olien, P.J. Tichenor, and D.P. Demers, "Community Structure, News Judgments and Newspaper Content," paper presented at the annual convention of AEJMC, Minneapolis, Minn., August 9-12, 1990.

[7] Roland L. Warren, The Community in America (Chicago: Rand McNally, 1978).

Mass media in the more pluralistic community would reflect the high degree of integration between the community and the larger world. Interaction between the community and outside groups would be more routine, and less prone to conflict than in the smaller community.

Following the above discussion, the first hypotheses about newspaper content is stated for testing:

1. **The amount of internal conflict in newspapers will be**
    a. **greater in more pluralistic communities, and**
    b. **will increase over time.**

Previous studies of community conflict have dealt primarily with conflict among community groups, and have demonstrated the positive relationship between pluralism and amount of conflict printed in the newspaper. Previous studies have also shown the tendency of the amount of conflict to increase over time. [8]

This study extends this interpretation to include an analysis of conflicts with non-local groups. An increased level of pluralism throughout the social system should result in a greater degree of large-scale bureaucratic organization. Bureaucratic forms of organization allow businesses and governmental agencies to benefit from economies of scale by eliminating the duplication of services and by centralizing operations. As society becomes more pluralistic, the need for bureaucratic forms of organization and control increases. Over time, community groups will find themselves increasingly controlled by non-local groups, both public and private. Local elites or local representatives of interest groups would be expected to raise challenges to the outside authority. Alternatively, outside groups may also appear as relatively neutral parties in local disputes that are caused by externally imposed rules or regulations, or may appear as referees or outside authorities that help determine the outcome of a local dispute.

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[8] George A. Donohue, Clarice N. Olien and Phillip J. Tichenor, "Reporting Conflict by Pluralism, Newspaper Type and Ownership," Journalism Quarterly 62: 489-499, 507 (Autumn, 1985).

The less pluralistic community may be particularly resistant to the imposition of rules and mandates that do not appear to take local conditions into consideration, or that appear to adversely affect the economic well-being of local groups. Thus, the following hypotheses are stated for testing:

2. The proportion of conflict with non-local groups will be
  a. greater in less pluralistic communities and
  b. will decrease over time.

These hypotheses incorporate Simmel and Coser's model of conflict. Small, homogenous groups can not tolerate conflict within the group, but can increase internal solidarity through the creation of a common outside enemy.[9] Conflict with out-groups may increase the internal cohesion of the group by helping to define the group identity and boundaries.

Another factor that would contribute to a greater proportion of conflict with outside groups among newspapers in less pluralistic communities is the way bureaucratic organizations control the distribution of information. Bureaucracies are designed to limit the downward and upward flow of information in order to increase efficiency.[10] Conflict can result from the community group's inability to communicate with decision-makers in the central offices. Exacerbating this lack of information is the overall decline in the availability of metropolitan daily newspapers, particularly in non-metropolitan communities.[11]

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[9] Lewis Coser, The Function of Social Conflict (Glencoe, Ill: Free Press, 1956).

[10] Charles Perrow, Complex Organizations: A Critical Essay (New York: Random House, 1986).

The proportion of conflict with outside groups is expected to decline over time as all types of communities become more complex. As the community grows, and as society creates more formal and open means of dealing with differences, newspapers would report more conflict among internal groups than conflicts with non-local groups.

Community Conflict and Political Change

Qualitative changes would be expected in newspaper reporting of conflict as the social environment changes.[12] During the mid- 1960's, the federal government was in an expansionist period, and came into increasing contact with communities of all types. Different forms of conflict would be expected during this period than in others. The economic recession of the early 1990's resulted in a great restructuring of public and private bureaucracies. Redundant services were withdrawn from local communities. Development was concentrated in metropolitan or regional growth centers. Newspaper coverage during this time period reflected a greater emphasis on state and regional groups rather than local groups.[13]

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[11] Clarice N. Olien, Phillip J. Tichenor, George A. Donohue, "A Changing Media Environment in the U.S," Paper presented to the annual conference of Association for Education in Journalism and Mass Communication, Boston, Mass., 1991.

[12] C.N. Olien, P.J. Tichenor, G.A. Donohue, K.L. Sandstrom and D.M. McLeod, "Community Structure and Editor Opinions About Planning," Journalism Quarterly 67:119-127 (Spring, 1990).

The governmental expansions of the 1960's and the governmental decentralization and contractions in the 1990's affected communities in similar ways. In both cases, non-local groups were affecting community change, often in the absence of input from local groups. Newspapers would be expected to reflect the activities and reactions of powerful groups within the community regardless of the time period. The following hypotheses are based on the notion that newspaper content not only reflects the community structure, but that it also reflects the impact of the world outside the community. As the balance of power among non-local groups shifts from federal to state-level groups, newspaper coverage of conflict with non-local groups would change from an emphasis on federal agencies to an emphasis on state-level agencies.

> **3a. Over time, the amount of federal-level regulatory and administrative agency sources should decline in local conflict stories.**
>
> **3b. Over time, the amount of state-level regulatory and administrative agency sources should increase in local conflict stories.**

The shift from federal-level to state-level administrative agencies and bureaucratically-organized regulatory groups involved in locally-relevant conflict stories would represent one outcome of the policy of "New Federalism" advocated by Reagan and Bush administrations.

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[13] George A. Donohue, Clarice N. Olien and Phillip J. Tichenor, "Local Power, the Press, and the World Outside: A Study of Leader and Editor Perceptions," paper presented at the Annual Conference of the Midwest Association of Public Opinion Research, Chicago, November 19-20, 1982.

Methods

Data for the study came from a content analysis of a purposive sample of 1965 and 1991 editions of Minnesota newspapers from 85 communities throughout the state. Originally, the sample was used as part of an ongoing study of the role of newspapers in communities with different levels of structural pluralism[14]. The sample can not be said to be representative of all newspapers in the state. The sample does, however, provide for a number of formal comparisons among communities with different levels of community pluralism. The sample can be used for conclusions about relationships among newspapers and communities, at least within the group being studied.

Independent Variables

The independent variables were community pluralism and newspaper frequency of publication. Pluralism was defined as the degree of specialization and differentiation within the community. Operationally, it is defined as the additive index comprised of standardized measures of community population, income, employment, and distance from the largest metropolitan area in the state.

Indicators of pluralism were derived from the 1960 and 1990 U.S. Census. Measures included: county population, city population, average per-capita income in the county, distance from the Twin Cities, and percent of persons within the county 18 years and older not employed in agricultural, fisheries or forestry occupations. The raw scores were standardized and added.

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[14] Department of Rural Sociology, University of Minnesota, has published numerous articles resulting from this series of studies, and reports regularly in Sociology of Rural Life (St. Paul, MN: Center for Rural Sociology and Community Analysis, University of Minnesota, 55108).

Dependent Variables

Newspaper Reports of Community Conflict

This study sought to expand the definition of newspaper conflict in order to analyze the role of non-local groups in locally-relevant conflicts. To begin, the author attempted to determine if inter-coder agreement could be established in identifying stories containing conflict. In previous studies, conflict was defined as "the amount of space devoted to stories in which there was an expression of difference or opposition between specific individuals or groups". The earlier definition required that coders identify the portion of articles containing conflict, measured in column inches, and then code each conflict story into one of three categories.

A set of stories coded as containing conflict in 1985 was used to establish inter-coder agreement. Individuals hired for a more extensive content analysis project were used in the reliability tests. Inter-coder agreement was not established using the three content categories from the original study. It was also determined that agreement could not be achieved in determining which portions of conflict articles contained conflict. The previous definition of conflict was then simplified and expanded to allow for an analysis of local controversies that included mention of non-local groups.

The expanded conflict code used for this study divided conflict into two analytical categories: **"Internal conflict"**, and **"Inside versus outside"**. **Internal conflict** was defined as:

> "locally relevant newspaper stories, letters to the editor, or editorials that express disagreements or controversies among local or regional groups or individuals. Internal conflict is the length of stories containing reports about manifestly differing positions or statements about a public issue from at least two persons, factions, organizations or interest groups in the region."

This definition was most congruent with the definition used in the original community conflict study.[15] The major difference was that the three categories of internal conflict were collapsed into one category, and the entire article was measured, rather than only portions coded as containing descriptions of conflicting views.

As with the original definition of conflict, the definition of internal conflict used for this dissertation allowed for the possibility of outside groups being present in the conflict, as long as there were clear expressions of differences of opinion among local or regional groups.

As with the original study, stories dealing with crime and law enforcement, business competition, individual feuds and lawsuits were excluded unless broader questions of public policy were raised. "Region" was defined as the newspaper's home county, and communities within a two-county radius of the home county.

The category of conflict added by this study was defined as **"inside versus outside"** conflict:

> "newspaper stories, letters to the editor, or editorials that express disagreements, controversies, or criticisms between a local or regional group and a state or national group, law or rule, in which the local or regional group or groups are portrayed as being without

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[15] C.N. Olien, G.A. Donohue, P.J. Tichenor, "Community Editor's Power and the Reporting of Conflict," Journalism Quarterly, 47:472-78 (1968).

disagreement regarding the actions, rules, or laws of non-local groups. To qualify for this type of conflict, the issue must be shown by the article to have local or regional relevance or to affect local groups adversely. An example would be a story in which the city manager is quoted describing the negative impact of a cutback in state aid to the city."

In general, outside groups were defined as state- and federal-level elected public officials, regulatory agencies, and businesses headquartered outside the region. The headquarters of businesses mentioned in stories was determined by referring to state business directories.

A third category included all of the 'inside versus outside' stories, as well as those stories coded as internal conflict but that also included prominent mention of outside groups.

Three individuals trained in the use of the conflict codes were given a set of stories from several Minnesota newspapers that were coded as containing conflict in a 1985 study using the original definition of conflict, and by the author using the revised code. In the first test, 24 stories were included, eight of which were coded as not containing conflict. Agreement on whether or not each of the stories contained internal conflict ranged from 75% to 100%. Agreement on whether or not each of the stories mentioned outside groups in conflict stories ranged from 70% to 83%. An additional test was conducted with one coder and the author, using three newspapers and 42 stories. Agreement between was 92% for the internal conflict variable, 88% for the presence of outside group variable, and 88% for identifying the outside groups in conflict stories.

Results

The first hypotheses was stated as follows:

1. The amount of internal conflict in newspapers will be
  a. greater in more pluralistic communities, and
  b. will increase over time.

Table 1, below shows support for the hypotheses. Three measures of conflict were used: mean number of conflict stories per issue, mean column inches per issue[16], and column inches as proportion of news hole [17].

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[16] All measures were converted to a 2" column standard. The length of each column of the story, including headlines, pictures, and jump copy was measured. A correction factor was used for papers with columns less than or greater than a 2" standard column, and for papers read on a microfilm reader that projected less than or greater than full size. The microfilm measure of the sum of the lengths of each of the columns in the story, including illustrations and jump copy, was multiplied by the correction factor. This correction factor was the length of the printed area of the original paper as listed in the Minnesota Newspaper Association (MNA) Yearbook, divided by the projected length of the printed area of the paper. If the newspaper's standard column width was not two inches, all measures were also multiplied by a correction factor which was the quotient of the original papers' column width divided by 2. Columns that were wider or narrower than the standard column for the newspaper were multiplied by an additional correction factor. This factor was computed as the width of the column divided by the standard column width for the paper or film.

[17] News hole was defined as the sum of local, regional, state, national, and international news, editorials, opinions, letters to the editor, editorial cartoons, legal notices, public notices, stock listings, sports scores, and entertainment news. Excluded from news hole estimates were advice columns, mastheads, advertisements, classified ads, comics, horoscopes, puzzles, tv and radio listings, subscription boxes, and white space not enclosed by stories or photographic layouts. The quotient of conflict inches divided by news hole inches was multiplied by 1000.

Table 1. Amount of internal conflict in 1965 and 1991, by pluralism.

internal conflict measure	year	lower pluralism (N:43)	higher pluralism (N:42)	total (N:85)
mean number of conflict stories per issue	1965	**.372**	**.619**[A]	.49
	1991	**1.35**	**2.20**[B]	1.77
mean column inches of conflict stories per issue	1965	**5.15**	**8.18**[C]	6.65
	1991	**24.11**	**34.62**[D]	29.3
column inches as proportion of news hole (x1000)	1965	**5.68**	**9.31**[E]	7.48
	1991	**17.46**	**31.32**[F]	24.3

[A] r=.315 p=.002 [C] r=.241 p=.013 [E] r=.452 p=.000
[B] r=.296 p=.003 [D] r=.447 p=.000 [F] r=.419 p=.000

As was shown in the original studies done with this group of communities, community pluralism was significantly associated with amount of internal conflict reported in the newspapers.[18] In support of a follow-up of the original study, these findings show that there was a significant increase over time in the amount of internal conflict on all measures.[19] Frequency of publication was not a significant predictor of any of the measures of community conflict.

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[18] C. N. Olien, G.A. Donohue, P.J. Tichenor. "Community Editor's Power and the Reporting of Conflict," Journalism Quarterly, 47: 472-78 (1968).

[19] G.A. Donohue, C.N. Olien, and P.J. Tichenor, "Reporting Conflict by Pluralism, Newspaper Type, and Ownership," Journalism Quarterly 62 (Autumn, 1985): 489-499, 507.

In general, these findings are consistent with the interpretation that newspapers serve as agents of community control of conflict. More pluralistic communities contain more formalized means of expression of conflict, and more diverse power structures. Newspapers are interdependent with the major institutions within the community, particularly powerful bureaucratic organizations designed to control and contain conflicts.

As less pluralistic communities grow and diversify to include greater levels of formalization and interdependence with groups within and beyond the community, newspapers can be expected to increase the amount of conflict reported in the newspaper. The extent to which this interdependence is reflected in newspaper coverage of conflict with non-local groups is the topic of the second set of hypotheses.

Conflict With Non-local Groups

The second hypotheses extend the community conflict model to include a consideration of non-local groups in community conflicts. The hypotheses were stated as:

2. The proportion of conflict with non-local groups will be
  a. greater in less pluralistic communities and
  b. will decrease over time.

Table 2, below, shows the hypotheses received mixed support.

Table 2. Proportion of 1965 and 1991 newspaper conflict that involves non-local groups, by pluralism.

content measure		lower pluralism (N:43)	higher pluralism (N:42)	total (N:85)
percent of conflict stories	1965 (s.d.)	**47.6** (34.5)	**43.3** (34.8)	**45.5** (34.4)
	1991 (s.d.)	**32.7** (25.3)	**24.1**[a] (19.9)	**28.4** (23.0)
percent of conflict inches	1965 (s.d.)	**47.7** (36.6)	**45.2** (36.3)	**46.5** (36.1)
	1991 (s.d.)	**37.7** (28.2)	**25.4**[b] (23.8)	**31.5** (26.7)

[a] t=1.72 p=.044 (one tail) r=-.09 p=.21
[b] t=2.16 p=.017 (one tail) r=-.19 p=.04

Table 2 shows that in the 1991 measures there was support for the hypothesis that the proportion of conflict with outside groups would be greater in the less pluralistic communities. The 1965 measures were in the hypothesized direction, but did not reach statistically significant levels. As hypothesized, the proportion of conflict with non-local groups declined between 1965 and 1991.

Thus, the Simmelian model of conflict has some application to the question of community differences in reporting conflict with outside groups. Small, homogenous groups can not tolerate conflict within the group, but can increase internal solidarity through the creation of a common outside enemy.[20] Conflict with out-groups may increase the internal cohesion of the group by helping to define the group identity and boundaries.

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[20] Lewis Coser, The Function of Social Conflict (Glencoe, Ill: Free Press, 1956).

As shown in Table 2, smaller communities tend to have a greater proportion of conflict with outsiders, perhaps because this type of conflict does not threaten the consensual nature of the community. Newspapers from more pluralistic communities tend to emphasize internal conflict. This is because the more pluralistic community has a greater level of formalization in all types of interaction, including conflict.

The decline in the proportion of conflict with outside groups between 1965 and 1991 is also consistent with Simmel and Coser's conflict models. In this case, communities in 1965 represent the less pluralistic system, and communities in 1991 represent the more pluralistic system. The large proportion of conflict with non-local groups in 1965 reflects the defensive reaction on the part of all types of communities unaccustomed to the intervention of an active Federal government such as the 1965 Johnson Administration.

In 1991, there was a greater absolute level of conflict with outside groups, but a smaller proportion when compared with all forms of community conflict. This reflects the growing level of responsibility of local governments to solve problems and administer programs formerly done at the federal level. Local governments need more formal institutions devoted to controlling the inevitable conflicts that emerge as society as a whole becomes more complex.

The next hypotheses demonstrate the changing balance of power as government grows at state and local levels. The hypotheses were stated as:

> **3a. Over time, the number of federal-level regulatory and administrative agency sources should decline in local conflict stories.**
>
> **3b. Over time, the number of state-level regulatory and administrative agency sources should increase in local conflict stories.**

The results are shown in Table 3. below.

Table 3. Percent and number of conflict stories containing mention of outside groups, by type of regulatory agency mentioned, by year.

level of agency	percent of conflict stories mentioning outside groups	
	1965 N:111	1991 N:209
federal-level agencies	**24.3**	**10.5***
state-level agencies	**4.5%**	**25.8***

* p<.05, chi-square

Table 3 shows support for the hypotheses. The percentage of non-local conflict stories mentioning federal-level regulatory and administrative agencies declined from 24.3% in 1965 to 10.5% of all non-local group conflict stories in 1991. Similarly, the percentage of non-local conflict stories mentioning state regulatory agencies increased from 4.5% in 1965 to 25.8% in 1991.

These findings show the increasing influence of state-level bureaucratic regulatory agencies. Because regulatory agencies are less accountable than elected officials, community leaders in the 1990's may have less control over the outcome of local disputes, and may have less input into the rules and standards imposed on their communities.

Conclusion

In general, these findings are in agreement with the conclusion that newspapers and editors are not independent critics of the power relationships within and beyond the community. Instead, the content of the local newspaper is systematically related to community conditions. As community conditions change, and as the world outside the community changes, newspaper content reflects the concerns of powerful groups within and beyond the community. Ultimately, newspaper reports of both internal conflict and conflict with outside groups, contribute to the maintenance of community stability, and community adjustment to change in the larger social environment.

The findings reported in this paper also show that efforts at 'decentralizing' or 'reinventing' government by incorporating management innovations originating in private, entrepreneurial enterprises did not seem to lead to a decline of bureaucracy or complexity. If anything, the amount of conflict increases as local power and responsibility grows. Smaller, less pluralistic communities tend to have a greater proportion of their conflicts with non-local groups, reflecting the community's vulnerability to decisions made outside the community.

In general, this study has shown that a more complete picture of the newspaper's social maintenance role emerges when the analysis of newspaper reports of community conflict includes a consideration of conflicts involving non-local groups.

Redefining "Know Nothings"

by

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ABSTRACT

This research offers an alternative method for defining public knowledge. Instead of patterning questions after civics exams, which test only factual knowledge, this paper suggests a way to measure familiarity with public affairs by indexing responses to open-ended questions. Scores on the knowledge-level index developed using these questions are found to correlate positively with media use and interaction with family and friends.

LIST OF TABLES

TABLE 1: Number of Respondents at Each Level of Knowledge

TABLE 2: Correlations of Knowledge Index To Reported Frequency Use of Six Types of Media

TABLE 3: Number of Respondents at Each Level of Media Use

TABLE 4: Cross-Tabulation of Percentages of Respondents By Scores On Media Use Index and Knowledge Index

TABLE 5: Cross-Tabulation of Percents of Respondents Reporting Discussion of News With Friends or Family By Knowledge Index Score

LIST OF FIGURES

Figure 1: Spearman Correlations Between Paired Sets of Three Variables: Discussion of News With Friends and Family, Knowledge Index and Media Index.

Redefining "Know Nothings"

The perverse and unorthodox argument of this little book is that voters are not fools. . . V.O. Key [1]

Since the term "know nothings"[2] was used by Hyman and Sheatsley[3] more than 45 years ago, political scientists and sociologists have written with some alarm about the large number of Americans who apparently are "steeped in political ignorance."[4] They base their concerns on the inability of respondents to correctly answer a series of questions that sound like they are lifted from a high school civics exam. As Whitney and Wartella note, "A virtual cottage industry has arisen in the past few years in making out the American public as a bunch of ignoramuses."[5]

Even the landmark "knowledge gap" hypothesis developed by Tichenor, Donohue and Olien[6] perpetuates this narrow concept of knowledge. The original research on which the hypothesis is based tested knowledge of such relatively obscure things as the names of earth satellites. Researchers did not address the relevance and usefulness of this kind of information to the average respondent. This problem with methodology based on "textbookish tests of political knowledge" was identified by Neuman, Russell and Just when they said:

> Interestingly, survey-based public opinion research has traditionally done better at measuring opinion than at measuring knowledge. . . When surveys do focus on knowledge rather than opinion, they tend to be asked primarily on rather narrowly conceived questions that one might associate with high school civics, such as the length of senators' terms or a definition of 'Electoral College.' [7]

Such pedagogical prejudice is not surprising since many researchers spend at least some of their day in classrooms. By limiting the kind of questions they use to define knowledge, these scholars have perpetuated an intellectual elitism that values factual knowledge over conceptual knowledge.

The research reported here, therefore, has a two-fold purpose. First, I will demonstrate construction of an index to measure knowledge that gives respondents full credit for familiarity with public affairs. I will then use the index to test this measure against two relationships:

H1: As media use increases, knowledge increases.

H2: As social interaction increases, knowledge increases.

Previous Research

The original work by Hyman and Sheatsley indexed knowledge based on respondents' ability to answer five foreign affairs questions. They covered such post-World War II issues as a Paris meeting of the Big Four foreign ministers, a proposed loan to England then being debated in Congress, and the political status of Palestine. Of the 1,292 persons interviewed, Hyman and Sheatsley defined about one in seven as "chronic know-nothings." Only 12 percent were aware of all five issues.[8] In 1964, Lane and Sears identified four kinds of information used to test public knowledge in surveys: (a) political leaders; (b) political issues; (c) government actions; and (d) political institutions. [9]

Using national public opinion polls from 1966 and 1970, Glenn concluded "a large proportion of the American public can not, or recently could not, intelligently vote or participate in the democratic process."[10] The polls he used asked people factual questions like the name of their Congressman, the identity of columnists and writers such as Walter Lippmann and Joseph Alsop and the definition of "open housing."

In 1988, Bennett applied a familiar classroom grading scheme to the measurement of public knowledge. Using a composite of ten indices that cover such issues as awareness of the political parties' "good" and "bad" points and knowledge of congressional candidates' names and parties, he passed out grades: A = at least 90 percent correct; B = 80-89 percent correct; C = 70-79 percent correct; D = 60-69 percent correct; and F = anyone not able to answer at least 60 percent of the questions correctly. On the basis of this grading scheme, he concluded that 29 percent of adult Americans are "know nothings." He considered awarding a passing score to those who answered at least 50 percent of the questions but discarded that idea, saying:

> . . . given the ease with which some items could be finagled and the leniency with which others were scored, to accept a standard so low would debase the currency of political information. . .Although strictly speaking, most of those who failed know "something" of public affairs, their inability to achieve a passing mark on a grade-inflated test constitute sufficient reason to refer to them as "know-nothings."[11]

In a study one year later, Bennett said that despite being better educated, Americans' knowledge of public affairs decreased between 1967 and 1987. That study scored the number of individuals able to correctly name three public officials in several national surveys conducted during that period.[12] In another study Neuman found that 56 percent of the population was unable to identify congressional candidates by name. He said:

> Data shows overwhelmingly that even the basic facts of political history, the fundamental structure of political institutions, and current political figures and events escape the cognizance of the great majority of the electorate.[13]

Recently, Carpini and Keeter[14] used an extensive questionnaire containing 50 open-ended factual questions about government and politics. Gallup asked 14 of them on various national surveys. They asked such things as "Will you tell me what the term 'veto' means to you?" While the questions were open-ended, they still looked for specific factual information.

The percentage of correct answers ranged from a low of ten percent who knew the ratification date of the women's suffrage amendment to a high of 96 percent who knew the length of a presidential term. The median correct score was 50 percent. Carpini and Keeter say:

> While factual knowledge is not the only standard by which to measure a citizenry, one can make the case that knowledge about the people, institutions, processes, and substance of national politics is a necessary, if not sufficient, prerequisite for an effective democracy. While we do not claim to have identified the specific bits of information the public must know, we think the information "tested" in this paper is both important in its own right and is a reasonable sample of the larger pool of knowledge one might expect from an educated citizenry.[15]

Clearly, many these authors put a premium on the ability of respondents to recite factual information rather than giving them freedom to talk about those things they found important. Lane and Sears recognized that these kinds of questions smack of:

> . . . "school knowledge" as contrasted to "life knowledge" and as such carried with them the faint coloration of dry, useless information. Few life decisions hinge upon them and their implications for policy matters men care about, though really enormous, are thoroughly obscure to most of the public.[16]

By concentrating on factual knowledge, scholars diminish the value of conceptual knowledge and ignore the essential role of cognitive schema in human information processing.

On this subject, Lodge and Hamill say:

> Confronted with a blizzard of facts, figures, and images from which political impressions are formed and judgments made, the individual must of necessity impose some perspective on the world to make it comprehensible. An effective cognitive framework allows the citizen selectively to attend to some stimuli and disregard others, to group together otherwise disparate bits and bytes of information, to store in memory a representation of this information, and then to retrieve it. . .[17]

In other words, human beings depend on broad conceptual schema to process and store knowledge. This suggests that researchers should open their lens as wide as possible when testing public knowledge. Researchers need to design methods to test knowledge based on the way people store and retrieve information. Instead of maintaining the kind of narrow fact-based focus that has marred much of the study of public knowledge in the past 45 years, the research reported here will suggest a way of measuring knowledge that gives full credit for knowledge of public affairs that does not depend on factual recall and then test levels of knowledge against two variables.

Research Method

Data used in this study were drawn from a telephone survey conducted between March 2 and 14, 1994. Respondents consisted of 474 randomly selected adult heads-of-household from the city and suburbs of Austin, Texas.[18] Primary and alternate telephone numbers were drawn from the 1994 *Greater Austin Telephone Directory* published by Southwestern Bell Telephone Company.

Using a method developed by Keir, et al.[19] the final digit of the random list of phone numbers was modified so that even unpublished numbers (such as new connections and unlisted telephones) had a random chance of being selected. Demographics for the sample compared favorably with published census data for the Austin area.[20] Interviewers were trained before the calls began and supervisors monitored the survey while it was in the field. Completed surveys were subjected to random verification and valid responses were coded and processed using standard data analysis software.

The survey covered a range of political and ideological issues as well as open and closed response questions about respondents' involvement in community groups and their media-use habits. Four open-ended questions were used to develop a knowledge score for each respondent. Two questions covered national/ international issues. One dealt with a state issue and one with a local issue. The four questions used to construct the index asked respondents to:

- Name the best program proposed by President Clinton.
- Name his worst program.
- Explain the general idea behind a high-profile incident involving Kay Bailey Hutchison, the first female elected to the U. S. Senate from Texas. The question left it to the respondent to define the "incident." Most talked about her indictment on charges stemming from her term as state treasurer.
- Give information about what they thought were the underlying causes of the environmental problems affecting Barton Creek. Protection of the creek, which feeds a natural swimming pool that is a popular city recreational and tourist attraction, was the subject of intense political debate in the community prior to the survey.

The two questions about Clinton's programs came early in the survey after respondents were asked to rate the performance of the President and First Lady. The questions about Sen. Hutchison and Barton Creek were separated from the Clinton questions and from each other. None of the open-ended questions involved prompting by the interviewers. Interviewers recorded answers verbatim.

A four-point "knowledge index" was developed for each respondent, as follows:

Score			Response
0 =	None	=	No questions answered.
1=	Low	=	Answered one question.
2 =	Moderate	=	Answered two questions.
3 =	High	=	Answered three questions.
4=	Very High	=	Answered four questions.

Respondents were given credit for any answer to a question that required thought.[21] In construction and scoring method, the Austin knowledge index is very similar to that used by Hyman and Sheatsley in the original "know nothing" article.

Results and Findings

Sixty percent (n = 289) of the Austin sample answered at least three of the four questions. As shown in Table 1, almost one-fourth of the respondents (n = 112) scored "very high" (a perfect 4.00) by giving an answer to all four questions. This compares with 12 percent who answered all questions in the 1947 "know nothing" profile by Hyman and Sheatsley.[22]

Only four percent (n = 20) of the Austin respondents failed to answer even one question. This compares with 14 percent labeled "know nothings" by Hyman and Sheatsley. The number which demonstrated no knowledge of the four issues on the Austin survey also is much smaller than the 29 percent that Bennett labeled "know nothings" in 1988 because they could not achieve a passing score on his civics' test.

Table 1
Number of Respondents at Each Level of Knowledge

Knowledge Index			
	Score	Frequency	Percent
Knowledge Level			
None	0.00	20	4.2
Low	1.00	54	11.4
Moderate	2.00	111	23.4
High	3.00	177	37.3
Very High	4.00	112	23.6
TOTAL		**474**	**100**

Note: This index is a composite score based on a value of "1" assigned for each question answered and a value of "0" for each question not answered. Maximum possible score = 4.00.
Questions: What do you think is the best program that President Clinton has proposed? What do you think is the worst program that President Clinton has proposed? If you had to explain the general idea of this incident (involving U.S. Senator Kay Bailey Hutchison) to someone who doesn't know about it, what would you tell them? What do you think are the underlying causes of the environmental problems at Barton Creek?

As a validity check, scores from the knowledge index were compared to respondents' reports of their own level of knowledge of public affairs. All correlations were significant (p<.001).[23]

Hypothesis One: Media Use

H1: As media use increases, knowledge increases.

The first hypothesis was tested applying two operational definitions of media use. Knowledge index scores were first compared to reported use of six types of media, as shown in Table 2.

Table 2
Correlation of Knowledge Index
To Reported Frequency Use of Six Types of Media

	Relationship To Knowledge Index		
	Spearman	df	Chi-Square
Type of Media			
Newspaper	.246***	16	53.56***
Local TV News	.051	16	10.68
Network TV News	.121**	16	20.16
CNN	.122**	16	32.34**
Radio News	.274***	16	50.42***
Newsmagazines	.212***	8	28.99***

** p <.01. *** p<.001.

Questions: How often do you read a daily newspaper? . . .Watch local evening TV news? . . . Watch network TV evening news? . . .Listen to radio news? . . .Watch CNN, the 24-hour cable news channel?. . Read a weekly newsmagazine such as Time, Newsweek or U.S. News and World Report? For all but the newsmagazine category, response options were as follows: Never or Seldom, 1-2 Days a Week, 3-4 Days a Week, Nearly Every Day, Every Day. For newsmagazines, the response categories were: Never or Seldom, 1-3 Times a Month, Every Week.

Austin respondents reported how often they read a daily newspaper, read newsmagazines, listened to radio news, and watched television news programs, including local and network evening news casts as well as the 24-hour cable news channel (CNN). In this comparison, only local television evening newscasts failed to show a significant relationship to knowledge scores.

The second test looked at aggregate effects of media use. To do this test, a composite index of overall media use was developed for five of the six media identified in Table 2.[24] This index is similar to the knowledge index. Each level of reported media use was assigned a numerical value as follows:

Value		Frequency of Use
0	=	Never or Seldom.
1	=	1 or 2 Days Per Week.
2	=	3 or 4 Days Per Week.
3	=	Nearly Every Day.
4	=	Every Day.

For example, a person who watched both local and network evening news nearly every day, read a newspaper every day and listened to radio news three or four days-per-week would earn a "high" media-use score of 12. On the other hand, someone who reported watching local evening news every night, but used no other forms of media information, would receive a low score of four. The maximum possible score for any respondent was 20 (5 X 4).

As shown in Table 3, about three-fourths of the respondents were "moderate" to "high" media users (scores of six to 15). Eleven percent (n = 52) were "very high" media users, while 15 percent (n = 69) were low media users. Three respondents used none of the five types of media measured.

Table 3

Number of Respondents at Each Level of Media Use

Media Use Index			
	Score	Frequency	Percent
None	0	3	.6
Low	1-5	69	14.6
Moderate	6-10	188	39.7
High	11-15	162	34.2
Very High	16-20	52	11.0
TOTAL		**474**	**100**

Note: The Media Use Index aggregates responses to the following five questions: How often do you read a daily newspaper? How often do you watch network TV evening news? How often do you watch local evening TV news? How often do you watch CNN, the 24-hour cable news channel? How often do you listen to radio news? Maximum possible score = 20 based on the following values for responses: Never or Seldom = 0; 1-2 days a week = 1; 3 - 4 days a week = 2; Nearly every day = 3; Every day = 4.

As shown in Table 4, there is a significant relationship between aggregate media use and knowledge (Spearman Correlation = .280 p<.001). "Very high" media users answered all four questions almost three times as often as "low" media users.

Table 4

Cross-Tabulation of Percentages of Respondents By Scores on Media Use Index and Knowledge Index

	Media Use Index				
	None (0)	Low (1-5)	Mod (6-10)	High (11-15)	V.High (16-20)
Knowledge Index					
None(0.00)	--	11.6	4.8	1.2	1.9
Low(1.00)	66.7	15.9	12.8	9.9	1.9
Moderate(2.00)	33.3	30.4	26.1	21.0	11.5
High(3.00)	--	29.0	39.4	35.2	50.0
Very High(4.00)	--	13.0	17.0	32.7	34.6
TOTAL	100% (n. 3)	100% (n. 69)	100% (n. 188)	100% (n. 162)	100% (n. 52)

Chi-Square = 53.77, df = 16 (p<.001) Spearman Corr = .280 (p<.001)

Note 1: The Knowledge Index aggregates answers to four questions. (See Table 1).

Note 2: The Media Use Index aggregates answers to five questions. (See Table 3).

Hypothesis Two: Social Interaction

H2: As social interaction increases, knowledge increases.

The second hypothesis was tested by comparing the knowledge index scores to respondents' reported frequency of discussion of news with family and friends. As shown in Table 5, data demonstrate a significant relationship (Spearman Correlation = .330. p=<.001) between the two variables. Respondents who discuss news with family and friends every day were seven times more likely than those who never discussed news to score "very high" on the knowledge index.

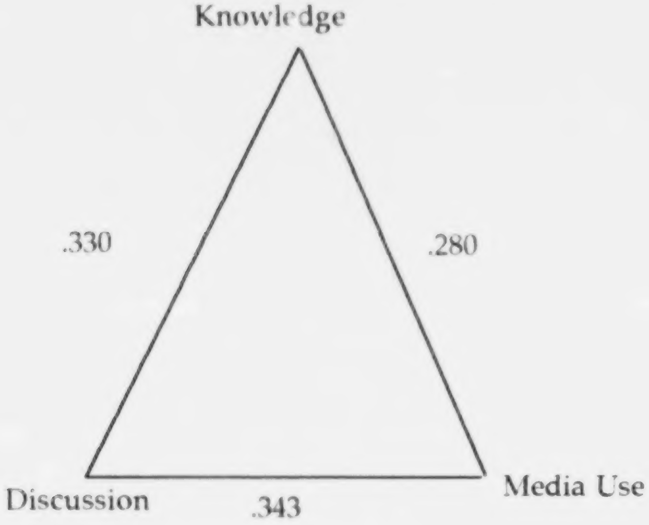
Table 5
Cross-Tabulation of Percentages of Respondents Reporting Discussion of News With Friends or Family By Knowledge Index Score

	Discussion Frequency				
	Never or Seldom	1 or 2 Days Per Week	3 or 4 Days Per Week	Nearly Every Day	Every Day
Knowledge Index Score					
None (0.00)	19.4	6.5	0.9	1.0	
Low (1.00)	19.4	14.1	12.7	4.9	8.7
Moderate (2.00)	29.0	25.0	32.7	16.5	15.4
High (3.00)	27.4	37.0	32.7	43.7	42.3
Very High (4.00)	4.8	17.4	20.9	34.0	33.7
TOTAL	100% (n. 62)	100% (n. 92)	100% (n. 110)	100% (n. 103)	100% (n. 104)

Chi-square = 87.38 df= 16 (p < .001) Spearman Corr = .330 (p < .001) Cramer's V = .215 (p<.001)
Question: How often do you discuss the news with your friends or family?
Note: There are three missing cases.

A similar strong correlation (Spearman's = .343, p<.001) also exists between frequency of discussion of news with friends and family and aggregate media use. Figure 1 shows the relationship between each pair of variables: media use, knowledge and discussion of news with family and friends.

Figure 1
Spearman Correlations Between Paired Sets of Three Variables: Discussion of News With Friends and Family, Knowledge Index and Media Use Index



Note: p<.001 for all three correlations.

Discussion and Implications

Analysis of data from the Austin survey found support for both research hypotheses. That is, knowledge is related to media use and to social interaction. As media use increases, knowledge increases and as social interaction increases, knowledge increases. Both findings support theories about knowledge previously advanced by scholars from the earliest contemporary discussions of public knowledge of civic affairs.

Hyman and Sheatsley reasoned that there is a relationship between knowledge of public affairs and information media. They said "know-nothings" would soon improve their knowledge scores if the information media were somehow "channeled into their vicinity."[25]

When he looked at the decline in knowledge scores between 1967 and 1987, Bennett made a direct connection to media, saying the "primary culprits for diminished political information are diminution in political interest and lessened reliance on newspapers."[26]

Findings relating to social interaction further validate Popkin's theory of the reasoning voter. He used cognitive and psychological research to conclude that conversations between people enhance knowledge and reasoning. He said:

> . . . voters actually do reason about parties, candidates, and issues. They have premises and they use those premises to make inferences from their observations of the world around them. . .People use shortcuts which incorporate much political information; they triangulate and validate their opinions in conversations with people they trust and according to the opinions of national figures whose judgments and positions they have come to know.[27] *(Emphasis Added)*

In addition, the research reported here found that the public demonstrates a broader scope of knowledge when allowed to respond to open-ended questions that do not presuppose a "right" or a "wrong" answer. Such questions allow respondents to offer information about issues and ideas that are most salient to them as opposed to being bound by quizzes of purely factual information. I do not believe that giving this broad discretion to respondents contaminates this measure of knowledge. This method merely gives individuals the opportunity to demonstrate the knowledge they do have.

After a series of experiments, Geer concluded that open-ended questions of this type, on balance, measure important concerns of respondents. He says such questions do not necessarily result in expression of superficial concerns nor are answers overly influenced by information the respondents recently learned.[28]

The variety of answers given in the Austin survey to the questions about President Clinton's programs suggest the level of thoughtfulness involved. Respondents could give any answer they wanted to the two questions about Clinton's programs and many did.

While "health reform" dominated the responses in both categories[29], respondents named more than 18 different programs as Clinton's "best" and more than 17 programs as his "worst."

In his book on mass opinion, Zaller says:

> . . . citizens do not typically carry around in their heads fixed attitudes on every issue on which a pollster may happen to inquire; rather, they construct 'opinion statements' on the fly as they confront each new issue. . . . in constructing their opinion statements, people make greatest use of ideas that are, for one reason or another, most immediately salient to them -- at the 'top of the head.'[30]

The four open-ended questions used for the knowledge index illicit just this type of "top of the head" response. Respondents had to draw on their own store of knowledge to articulate a response without prompting or prelude. For these reasons, it can be argued that open-ended questions are valid measures of knowledge, albeit conceptual rather than factual.

Finally, this study suggests that the level of knowledge demonstrated in the 1994 Austin survey is much higher than that demonstrated using a similar scale in 1947. The dramatic differences between the Austin scores and the 1947 scores by Hyman and Sheatsley warrant further comment. There is some basis to view the two measures as relatively comparable. Both studies use broad conceptual questions about current affairs instead of relying on a fact-based civics' exam testing procedure. Both studies also give credit for all correct answers.

The populations measured, however, may not be comparable. As the Capital of Texas and seat of state government, about one-fourth of Austin's labor force makes a living in the public arena as government employees. In addition, Austin has a college and university population of more than 100,000 and is the most highly educated community of its size in the United States.[31] For these reasons, findings may not be applicable to other communities.

Future Research

While this research is suggestive, it leaves a number of unanswered questions that warrant further research. Although this study shows a relationship between knowledge level and two variables -- social interaction and media use -- further statistical analysis could help determine whether they are dependent on a fourth intervening variable, such as education.[32]

The single measure of social interaction used for this test (discussion of news with family and friends) could be strengthened by pairing it with other measures of social interaction, such as membership in community groups.

If additional research replicates the findings in the Austin survey, a more accurate picture of the electorate's knowledge of public affairs may emerge to replace the distorted image of a "know nothing" electorate.

Footnotes

[1] Key, V.O. (1966) The Responsible Electorate (Cambridge, Mass.: Belknap Press of Harvard University Press), p. 7.

[2] There is no relationship between this term and the bigoted Know-Nothing Party (or "American Nativists") that espoused anti-foreign and anti-Catholic sentiments in the mid 1800s.

[3] Hyman, Herbert H. and Paul B. Sheatsley (1947), "Some Reasons Why Information Campaigns Fail," Public Opinion Quarterly 11(3):412-423.

[4] Bennett, Stephen Earl (1988) "'Know-Nothings' Revisited: The Meaning of Political Ignorance Today," Social Science Quarterly 69(2):467-490, p. 476.

[5] Whitney, D. Charles and Ellen Wartella, "The Public as Dummies," Knowledge: Creation, Diffusion, Utilization 10(2):99-110, 1988.

[6] Tichenor, P.J., G.A. Donohue and C.N. Olien (1970) "Mass Media Flow and Differential Growth in Knowledge," Public Opinion Quarterly 34(2):159-170, p. 164.

[7] Neuman, W. Russell, Marion R. Just, Ann N. Crigler (1992) Common Knowledge: News and the Construction of Political Meaning (Chicago: University of Chicago Press), p. 13.

[8] Hyman and Sheatsley (1947), pp. 413-414.

[9] Lane, Robert E. and David O. Sears (1964) Public Opinion (Englewood Cliffs, N.J.: Prentice L. Hall, Inc.), p. 58.

[10] Glenn, Norval D. (1972) "The Distribution of Political Knowledge in the United States" in Political Attitudes and Public Opinion ,Dan D. Nimmo and Charles M. Bonjean, Eds., (New York: David McKay Company, Inc.), pp. 273-283.

[11] Bennett (1988), pp. 482-483.

[12] Bennett, Stephen Earl (1989) "Trends in Americans' Political Information, 1967-1987" American Politics Quarterly 17(4): 422-435.

[13] Neuman, W. Russell (1986) The Paradox of Mass Politics: Knowledge and Opinion in the American Electorate (Cambridge: Harvard University Press), p. 15.

[14] Carpini, Michael X. Delli and Scott Keeter (1991), "Stability and Change in the U.S. Public's Knowledge of Politics," Public Opinion Quarterly 55(4): 583-612.

[15] Carpini and Keeter (1991), p. 606.

[16] Lane and Sears (1964), p. 61.

[17] Lodge, Milton and Ruth Hamill (1986) "A Partisan Schema for Political Information Processing" American Political Science Review 80(2): 505-519.

[18] Sampling Error = 4.5 percent.

[19] Kier, Gerry, Maxwell McCombs, Donald L. Shaw (1991) Advanced Reporting: Beyond News Events (Prospect Heights, Ill.: Waveland Press, Inc.).

[20] The sample contained an even distribution of males (n = 233) and females (n = 240). Partisanship reflected a fairly even distribution among Republicans (28 percent), Democrats (35 percent) and Independents (32 percent). Half the sample is between the ages of 25 and 44. Almost half of those sampled reported that they have at least a bachelor's degree. More than 60 percent reported annual household incomes of $30,000 or more. Two variables -- race and education -- were out of range. The sample proportion identifying themselves as Caucasian or White was high and the portion identifying themselves as Latino or Hispanic was low. While many Texas Hispanics identify themselves as Caucasian, the U.S. Census classifies them as Hispanic/Latino. There also was an under-sampling of individuals who had no college and an over-sampling of those with graduate degrees. The difference between the sample and census data may be explained by definitions used. The census numbers include everyone 18-years-old or older while the sample included only heads-of-household. The latter definition would have excluded high school students still living at home and senior citizens living with adult children.

[21] For the Clinton program questions, answers like "All" or "None" did not count. To get credit, respondents had to actually articulate a program by name or reference.

[22] Hyman and Sheatsley (1947), p. 414.

[23] *Questions:* "Would you describe yourself as 'Very Informed,' 'Somewhat Informed' or "A Little Informed' about: Foreign Issues? National Issues? State Issues? Austin-Area Issues?" Spearman's Correlations between answers to these questions and respondents' scores on the Knowledge Index were as

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follows: Foreign Issues, .319; National Issues, .367; State Issues, .265 and Austin-Area Issues, .256 . All were significant (p<.001).

[24] The composite index does not include newsmagazine readership because response categories were not compatible with those of other media.

[25] Hyman and Sheatsley, p. 414.

[26] Bennett (1989), p. 432.

[27] Popkin, Samuel L. (1991) The Reasoning Voter: Communication and Persuasion in Presidential Campaigns (Chicago: University of Chicago Press), p. 7.

[28] Geer, John G. (1991) "Do Open-Ended Questions Measure 'Salient' Issues?" Public Opinion Quarterly 55: 360-370.

[29] In all, 163 respondents said "health reform" was Clinton's best program while 156 said it was his worst program.

[30] Zaller, John R. (1992) The Nature and Origins of Mass Opinion (New York: Cambridge University Press, 1992), p. 1.

[31] Austin Community Profile (1993) Greater Austin Chamber of Commerce , p. 5.

[32] For instance, Zaller (1992) has suggested that frequency of political discussions with peers and self-reporting about media use have little impact on news perception if the research design controls for general awareness. (p. 44).

A Spatial Model of Ideology and Political Communication: Voter Perceptions of News Reporting

by

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> The popular commercial press of the second half of the nineteenth century and down to our own times has had as its central motive the immediate satisfaction of the largest number of people.
>
> Walter Lippmann (1931: p.436)

Is Lippman's observation about American media still accurate? The transmission of news has both an economic and a political context. The media are economic institutions, and journalists have motivations to appeal to the largest possible audience. But the media consuming public may also perceive a political bias in reporting. As perceptions of bias may influence consumer choices among media outlets, journalists may also have the economic incentive to establish standards of political neutrality and objectivity.

Research analyzing ideological content of news reports or elite assessments of political bias fails to account for the perceptions of the general public. Responses to opinion surveys suggest the perceptions of bias but stop short of providing theoretical explanations. An improved theory should incorporate citizen perceptions of news reporting as a component of a traditional model of political ideology. The spatial theory of ideology provides political scientists with a useful model of public opinion, candidate strategy, and vote choice (Enelow & Hinich, 1984; Hinich & Munger, 1994). This paper extends the traditional spatial model to include political communication.

The paper has two objectives. First, it tests the relative placement of journalists to politicians and voters in an ideological space. If media are driven to maximize their audience, then journalists should be located near the center of the space. Second, the paper suggests that citizen evaluations of media reporting are a factor in the ideological space. Political moderates should believe the media to be unbiased, while strong ideologues should doubt the neutrality of news reporting.

This paper proposes an empirical test of the placement of journalists within a two-dimensional ideological space. Voter perceptions of major political and media figures, measured as feeling thermometers scores from a national survey, are used to construct this spatial mapping of ideology. Journalists and media institutions are found to lie near the center of the policy space and voter evaluations of news reporting are related to the second dimension of that space. Data support the conclusion that political communication and potential audience member assessment of news reporting are important features of a spatial theory of ideology.

A Spatial Theory of Ideology

Political applications of the spatial model borrowed from theories of economic competition (Hotelling, 1929; Smithies, 1941). Economists suggested that competing firms should seek a stable equilibrium to maximize profit for each firm. One illustrative example is the businesses' geographical location. If consumers choose between similar stores by minimizing travel time, then two stores in a hypothetical small town should locate across from each other near the middle of Main Street. If one store moves away from this central location, it loses customers who would reside nearer its competitor.

The economic concept of equilibrium can be applied to the political world. The tendency of competing businesses toward imitation can be applied to political parties during elections. The goal of a political party is to maximize votes. To do so, parties and candidates purposefully take positions in the center of the distribution of voter preferences. Two parties offer similar platforms to ensure that each gets half of the votes cast.

Political commentators frequently refer to politics as a left-right continuum. In the American context, the primary dimension underlying ideology resembles a liberal-conservative economic scale. Restricting issues to a single policy dimension with single-peaked preferences produces an equilibrium at the position of the median voter (Downs, 1957; Black, 1958). According to this theory, a voter chooses to support the candidate nearest to them on the ideological scale. Voters do not need complete or perfect information about public policy or candidate issue positions. Voters must only have an opinion on which candidate seems more closely identified with their general policy preferences. To maximize vote share, parties and candidates should adopt platforms which appeal to the median voter. The party with policy positions distant from the median voter will lose to a centrist party.

Unfortunately, the mathematical proof of the median voter theorem applies only to a single underlying ideological dimension. Extension of this spatial model to multiple dimensions seems necessary since political discourse and campaign issues seldom fall onto a single scale. Yet empirical examinations of voter preferences suggest that a central tendency remains; successful political figures are positioned near the median voter in each dimension.

Enelow and Hinich (1984) use survey responses on feeling thermometers from the American National Election Studies of 1976 and 1980. Enelow and Hinich create ideological maps of the electorate and find voter ideal points and perceived candidate locations. Their findings are consistent with predictions of candidate placement and with actual votes cast in the elections. Indeed, voter perceptions of the ideological positions of political figures appear relatively stable across time (Endersby & Hinich, 1992). The results of Enelow and Hinich suggest at least two dimensions within American political ideology. The first conforms to the liberal-conservative economic dimension; they believe the second dimension includes positions on social issues. Hinich and Munger (1994) strengthen the original voting model by establishing a theory of ideology. They also suggest the need to incorporate political communication into the spatial model (1993).

This paper suggests a further application of spatial theory from economics and political science to mass communications. In political applications, competing businesses are replaced by parties and candidates and customers are replaced by voters. In a mass communications model, businesses are replaced by media institutions and individual journalists and the voters are replaced by the potential audience members. This media model links the political and economic models within the field of mass communications. According to theoretical expectations, competing media are expected to take positions in the middle of consumers' (political) preferences. The next section of the paper examines this possibility.

Journalism and Political Ideology

Journalists' needs to attract large audiences stems from the commercial system in which American media operate (Culbertson, 1983). The information and opinions that the media provide is one of the many commodities produced and distributed in a free market economic system (Altheide, 1984; Ginsberg, 1986; Herman & Chomsky, 1988; Entman, 1989). As early as Joseph Pulitzer's time, a newspaper was seen inevitably as a business (Baker, 1954). Like any enterprise in corporate America, the news organizations have to follow the rules of competition and profit. Reiter (1987) has argued that journalists are entrepreneurs trying to make a living by giving the audience the information that they think it would accept. Similarly, Gans (1972, 1980, 1981) has suggested that journalists' values are those of liberal capitalism.

In the larger context of liberal capitalism, the marketplace of ideas is just one component of the free market economy. Most American media are independent from the government, market-driven, and profit-oriented (Hallin, 1987). They need to please the audience and attract advertisers. They must follow the same rules as other commercial products competing in an open market, and the market mechanisms apply to them. Mainstream mass media, then, should maximize market (audience) share by appealing to the largest number of consumers.

Not all media should be expected to seek a neutral, centrist position. Media targeting specialized markets should move toward the center of the subset of consumers within that market, not of the public at large. Early American newspapers, for instance, were clearly partisan in nature and sought only to satisfy party identifiers. Media in socialist and authoritarian regimes also should have less incentive to maintain standards of objectivity. Government operated media should first satisfy the ruling elite; private media shoud satisfy owners. Reporting should not alienate owners, but these restrictions only define the limits on the parameters of a consumer-driven market.[1] Mainstream reporting in democratic market economies should seek impartial news transmission in order to maximize audience size among the general public.

The profit motive serves as a convenient assumption for the model, yet the incentive to maximize audience share exists even without this strict assumption. As Entman (1989) notes, even without the economic pressures behind them, media would still have the motive of pleasing their audience. This could bring prestige, a sense of reaching and influencing large groups of people, and of fulfilling the mission of public service. Non-commercial media also cater to their audience's interests and in this respect, could fall within the scope of traditional economic analysis.

American print and broadcasting media depend on advertising and profit from maximizing their consumers. In broadcasting, the addition of more viewers or listeners does not increase the cost to producers but may stimulate the interest of advertisers. With print media, the largest cost is making the initial copy; any additional copy costs less and might pay off from advertising revenues (Nord, 1980). Profit for mass media products is volume.

Shoemaker and Reese (1991) emphasize that the primary goal of privately owned media organizations is profit. This economic goal is intensified for major American media companies due to their stockholder ownership. The increasing tendency in the media industry toward big monopolies, cross-ownership, and control by outside corporations has multiplied the economic stakes. Media giants with more human and financial resources to lose, should be more likely to follow their customers' demands and take fewer editorial, ideological, and, ultimately economic risks. That is not to say that smaller media are not also profit-driven. Few media in the United States rely on subscription or sales for profit-making; the biggest source of revenue for mainstream media is advertising.

For any news organization the audience appeal "translates into higher circulation and ratings, producing greater advertising revenue" (Shoemaker & Reese, 1991: p.122). "We always look for programming that appeals to everybody," says Herman Keld, programmer for CBS, regarding television programming in general (Gitlin, 1983: p.57). For news media, the target audience is largely the same as the electorate taken as a whole. Maximizing audience share usually means a non-controversial, safe approach to news coverage: source-domination or depending on government officials, experts, and think-tanks (Chomsky, 1985; Sigal, 1986; Herman & Chomsky, 1988), framing news stories as conflict, for example election stories as "horse-race" (Patterson & McClure, 1976; Entman, 1989; Lemert, 1989; Neuman et al., 1991), episodic coverage of events without connecting them to larger issues or alternating "he said, she said" quotes. Despite the salience of political news, reporting seldom is detailed or analytical. Norms of objectivity, the deliberate detachment of journalists' personal political beliefs from their news stories, have become a standard of American journalism. Those norms equate to a moderate and nonpartisan political ideology (Gans 1972; Ognianova and Endersby, 1995). This suggests that citizen evaluations of journalists and media institutions can be placed in a political context and that they should be perceived as ideologically centrist.

Survey Data

Modeling ideology and perceptions of bias in mass communications requires national survey data of potential voters and consumers. Respondents should evaluate a variety of political and media figures. Feeling thermometer scores may serve as summary measures for evaluations of candidates and other elites. The thermometer ratings provide a measure of distance between the respondent and the recognized figure. The distance measures enable researchers to produce a map of the respondents' ideological preferences and perceived positions of elites in a policy space. This study uses data collected in the 1974 American National Election Study conducted by the Center for Political Studies at the University of Michigan (Miller et al., 1975). Though the National Election Study is conducted biannually, the 1974 survey is the only occasion in which respondents are asked to rate a variety of media figures along with political elites on the feeling thermometers. Since a model of political communication requires evaluations of both journalists and politicians, the 1974 study–although dated–is the only national survey that can be used for this analysis.

The 1974 American National Election Study surveyed 1,575 randomly selected American adults for personal interviews conducted between November 5, 1974 and January 31, 1975. The survey provides comprehensive information about respondents' political attitudes and voting behavior during the period of Watergate and the 1974 Congressional Elections. Included in the survey questionnaire is a series of items asking the respondent to rate political and media figures on a feeling thermometer from 0 to 100. A score of 0 indicates that the respondent feels 'cold' or negative toward the person or group; a 100 means the respondent has a 'warm' or positive feeling for the person or group. A score in the middle, 50, indicates the respondent has no particular feelings one way or the other.

Political figures rated by the respondents include Hubert Humphrey, Ted Kennedy, Richard Nixon, and George Wallace; among the political groups rated are Democrats, Republicans, conservatives and liberals. In addition, the survey asked respondents to rate three television news anchors, John Chancellor, Walter

Cronkite, and Howard K. Smith, along with TV commentators and newspaper editors in general. Table 1 reports the mean and standard deviations of the thermometer scores for the filtered sample (described below). Television journalists scored somewhat higher in the aggregate; politicians lower. The survey instrument also requests information about mass media consumption and about attitudes toward the media, including the performance of the media in the Watergate coverage.

Among the full sample, a plurality of respondents said they followed public affairs most of the time (39 percent). Most read a daily newspaper (73 percent) and frequently watched the television networks national news shows in the early evening with anchors Cronkite, Chancellor, and Reasoner-Smith (59 percent). Out of the three early evening news broadcasts, CBS was watched the most (45 percent), followed by NBC (32 percent), with ABC watched least (21 percent). Respondents often read more than one newspaper (perhaps local and regional). The majority also said they read stories about politics frequently, with 39 percent reading frequently about national politics and 42 percent reading frequently about local politics.

The party identification of the respondents was distributed as follows: 18.4 percent were strong Democrats, 20.5 percent were weak Democrats, 12.6 percent were Independents leaning toward the Democrats, 13.7 percent were Independents with no preference for the Democratic or the Republican party, 9.3 percent were Independents leaning toward the Republican party, 13.9 percent were weak Republicans, and 9.2 percent were strong Republicans. Independent leaners are traditionally more consistent in voting for their preferred party than weak partisans, despite claims of independence. On the liberal-conservative continuum, a plurality of the respondents (38 percent) viewed themselves as 'middle of the road,' followed by slightly conservative (18 percent), conservative (16 percent), liberal (13 percent), slightly liberal (11 percent), extremely conservative and extremely liberal (just over 2 percent for each category).

The methodology does not allow missing data, so respondents who did not rate all thirteen figures listed above were removed from the sample. In addition, a filtering procedure was devised to divide thermometer scores into nine intervals. Individuals who gave similar ratings to 90 percent or more of the evaluated political figures and media personalities were not considered as seriously responding to survey questions and were also removed from the sample. After the omission of missing data and the execution of the filtering procedure, the sample contains 1,025 respondents.

Methodology

Spatial models of politics construct an ideological map containing perceived positions of political figures as well as the ideal or most preferred points of the voters. An empirical model of the electorate can be conducted using the Cahoon-Hinich method of point and range location, and a spatial mapping from the survey responses can be constructed. The model requires calculations of the approximations of the policy distance from voter ideal points to each set of known political figures. This approximation, $\mathbf{T}_{jm}$, of voter m for candidate j can be represented as follows:

$$\mathbf{T}_{jm} = c_{jm} - ||x_j - z_m||^r ,$$

where $\mathbf{x}_j$ is a vector of the jth candidate's ideal point in the ideological space, $\mathbf{z}_m$ is the vector of the mth voter's ideal point in the ideology space, **r** is the measure of sensitivity of voters to candidates close to their ideal points, and $\mathbf{c}_{jm}$ is a scalar denoting influence of nonsystematic variances on $\mathbf{T}_{jm}$.

The methodology used here is identical to that developed by Cahoon, Hinich, and Ordeshook (1978), Hinich (1978), and Enelow and Hinich (1984: ch. 9). An estimation of the positions of the candidates in the ideology space is determined in the following manner. The thermometer scores for each of the candidates and the relevant groups are adjusted so that a zero indicates a voter's preferred position and a 100 is the maximum distance from that ideal point. The differences between candidates and voters are raised to the second power as a measure of squared Euclidean distance. In addition, each of the scores is subtracted from a single person or group, in this case, the Democrats. The selection of this pivot is arbitrary.

The adjusted scores compose the covariance matrix for a factor analysis that results in an estimate of the political and media figures' position in the respondents' ideology space. The factor analysis is followed by two separate regressions. The first regression eliminates the error terms. The second regression estimates the remaining parameters for the model and the ideal points of the respondents in the policy space. This allows the creation of a map that places both the political figures and the respondents' ideal points in the ideological space.

Locations in the Ideology Space

Figure 1 presents the estimated positions of politicians and journalists in a two-dimensional ideological space. A two dimensional model explains 62% of the variance in the 1974 respondents' scores.[2] The range of the survey respondents is not included in Figure 1 and is much larger than indicated by this graph. The full distribution of respondents, shown in Figure 2, is relatively circular. The median and mean voter in each dimension is located at the origin. Scales on each axis range from -40 to 40 for Figure 1 (to distinguish relative positions of elites), axes in Figure 2 range from -140 to 140. The numeric value of the ideal points only demonstrates the relative placement between positions; the magnitude has no meaning in itself.

Placement of politicians, parties and ideological groups in the policy space meets general expectations of their locations. Political figures seem aligned primarily on a left-right continuum from Ted Kennedy on the left to Richard Nixon on the right. Only the position of George Wallace seems suspect. He is on the right side of the liberal-conservative spectrum, yet unusually close to the Republicans. All of the political figures and groups lie to one side of the median voter on the second dimension, perhaps exhibiting the electorate's dissatisfaction with politics in 1974. Though the politicians are shifted to one side of the y-axis, they are still near the center of the electorate.[3] Relative locations can be determined by comparing the two parts of Figure 2. The lower half of Figure 2–the perceived elite positions–can be laid over the distribution of voter positions in the top half to compare voters and elites.

Journalists, however, are located exactly where we would expect in a media market. The three television anchors are clustered near the origin –the median consumer in each dimension. Groups of journalists, TV commentators and newspaper editors are located nearby. The hypothesis that journalists should be located near the center of the space finds strong support among ratings of the 1974 general public.

The placements so far have no meaning in and of themselves, only relative affective positions between respondents and perceived placements of well-known individuals and groups. Can meaning be assigned to the dimensions? Enelow and Hinich find that the first dimension in this space corresponds to policy preferences along a liberal-conservative dimension and that the second dimension is related to preferences on social questions such as abortion and drug use. To allow interpretation of the dimensions, self-placement of individuals on policy questions needs to be included in the analysis.

The 1974 survey asked respondents to identify their partisanship and their political ideology. Separating respondents according to their self-placement on each of the scales allows creation of a mean score for each category in each dimension.[4] Those mean ideal points are plotted against positions of the political and media individuals and groups in Figure 3. Responses on both of these scales roughly parallel the x-axis and allow interpreation of this direction in the map. Partisanship is related to voter placement along the x-axis. Ideological orientation is related to positions on the x-axis even more clearly than political party identification. Findings here are consistent with previous empirical tests of spatial theory in the context of election campaigns. As in that research, self-placement on the traditional liberal-conservative spectrum corresponds to this first dimension.

Interpretation of the second dimension has consistently been a problem for political scientists. The "social issues" characterization is often used, but the second dimension (the y-axis as shown here) comprises a bundle of issues that are not easily placed on the left-right economic scale. The inclusion of media figures allows a clearer representation of the second axis in the context of political communication. The 1974 surveys also ask respondents questions on the performance of the television and newspaper reporting. Figure 4 plots the mean responses to two of the questions on coverage of Watergate and on assessment of television news.

Responses on these questions do not strictly follow the dimension of partisanship and economic ideology. Mean responses for each category on these two scales lie close along a line at a 45 degree angle to the x-axis. This suggests that responses to these questions are related to partisanship and ideology while maintaining some independence from that dimension. Individuals with a positive evaluation of the news media lie closest to the origin and to the placements of the journalists. Those with negative evaluations tend to lie in the northwest quadrant, close to the perceived position of President Nixon. The second dimension in this mapping is related to evaluation of the role of the media in political reporting (though not exclusively so). Still, assessment of media performance has a nontrivial relationship to evaluation of political and media elites.

The spatial model allows incorporation of nonpolicy characteristics such as evaluations of candidates' honesty, morality, and competence. Empirical tests suggest that voters also consider nonpolicy factors when choosing among candidates and parties (Enelow and Hinich, 1984; Endersby, 1994). Data on these nonpolicy characteristics are not available in the 1974 election survey. If nonpolicy factors were preeminent in respondents' ratings of candidates and journalists, then policy and ideological orientation would be poorly related to the derived placements. Since responses to issue questions follow a predictable pattern in the mapping, candidate and journalist personal characteristics appear secondary to ideology and policy positions.

Interpretations and Conclusions

The empirical test reconfirms that the pubic evaluates political leaders in the context of personal political partisanship and ideology. Yet inclusion of journalists maintains the integrity of the spatial model. News reporters are located near the center of the general public's preferences. Ideology and assessment of media performance are factors independently related to evaluation of elites.

The context of the 1974 election survey may introduce some bias into evaluations of media and political figures. Public opinion on the performance of political leaders and the media was probably more intense during the Watergate era. But perceptions of greater ideological emphasis of news organizations were not found. On the contrary, respondents placed journalists in the center of the policy space. Application of the model to the political environment of 1974 shows that spatial theory can be applied to mass media research. The findings support the hypothesis that political communication processes influence individual opinions about politicians and journalists.

The fit of a model excluding the media personalities and groups is somewhat better than the model reported here (82% of the variance is explained compared to 62% in this hybrid model). Though the two models are not directly comparable, additional placement of journalists yields somewhat greater error. Yet the null assumptions, if ideological content is not important to evaluation of media elites, would suggest that the method would place journalists and politicians in a random and uninterpretable fashion. The findings here are reasonable placements and, with the addition of survey responses on issue questions, locations of both politicians and journalists take on meaning in the context of the political environment of 1974.

Both of the primary research objectives are met in this analysis. Major media commentators are located near the center of ideological preferences of the general public. Journalists are evaluated as moderate by the public, even in the controversial years of the mid-1970s. Yet evaluation of journalists also takes on political content. Relative placement of politicians and journalists in part is related to perceptions of two dimensions. The first closely corresponds to a left-right idelogical dimension. Independent of that is a dimension on assessments of performance of news reporting.

The spatial model of ideology provides a successful means to analyze the role of the national media in public affairs. Mainstream media appear to seek the middle of the ideological preferences. That strategy of journalists, particularly during the Watergate era, seems to take on meaning. Evaluation of media performance is related to a second dimension of ideological preferences, and journalists are rated in comparison to the institutions on which they report. The findings here suggest that journalists successfully seek to be perceived as ideologically neutral, yet that search also has an ideological content for media consumers.

A spatial theory of political communication complements current mass media research and adds a new framework of analysis. First, and the main focus of this paper, the spatial model incorporates the perceptions of voters and media consumers. Communication scholars must examine the mass media messages as received and interpreted by readers and viewers, rather than on journalist intentions or on how researchers expect or prefer consumers to use information. Second, spatial theory reemphasizes the economic constraints on the national media. Political reporting is influenced by the media's need to appeal to a wide audience. Third, spatial theory allows us to make predictions about how journalists and consumers will respond to information stimuli in the political environment. This opens up political communication studies to new avenues of research and will lead to an improved understanding of the interplay of media and politics.

Notes

[1] For example, journalists in an authoritarian society might limit harsh criticism of government, party, or religious leaders. Even in democratic societies, many political views, particularly radical ones, may be off limits. Yet the assumptions of this model for market-driven economies lead to this finding. Media outlets espousing radical views are less likely to appeal to the median consumer, so they should rarely be covered in a positive manner.

[2] The first eigenvalue of 132.0 explains 44.3% of the variance, the second eigenvalue of 52.3 adds 17.5%, and the R-squared value for the first regression is .978. The second regression to estimate relative spatial coordinates of candidates and voters is .965, quite high for the construction of the map.

[3] Using different methods to derive voter and candidate positions, Poole & Rosenthal (1984) and Rabinowitz (1978) find spatial locations for Presidential candidates that are located on the periphery of the ideological space. That is, that candidates are among the most radical individuals in the electorate. This position seems poorly supported by other evidence, empirical or theoretical. The researchers do not support interpretations of locations by other survey data. Peripheral locations seem a function of both the method and the small number of candidates used.

[4] Median scores within each response category were also used and were similar to the reported results. The previous literature uses mean rather than median scores so that standard is followed here.

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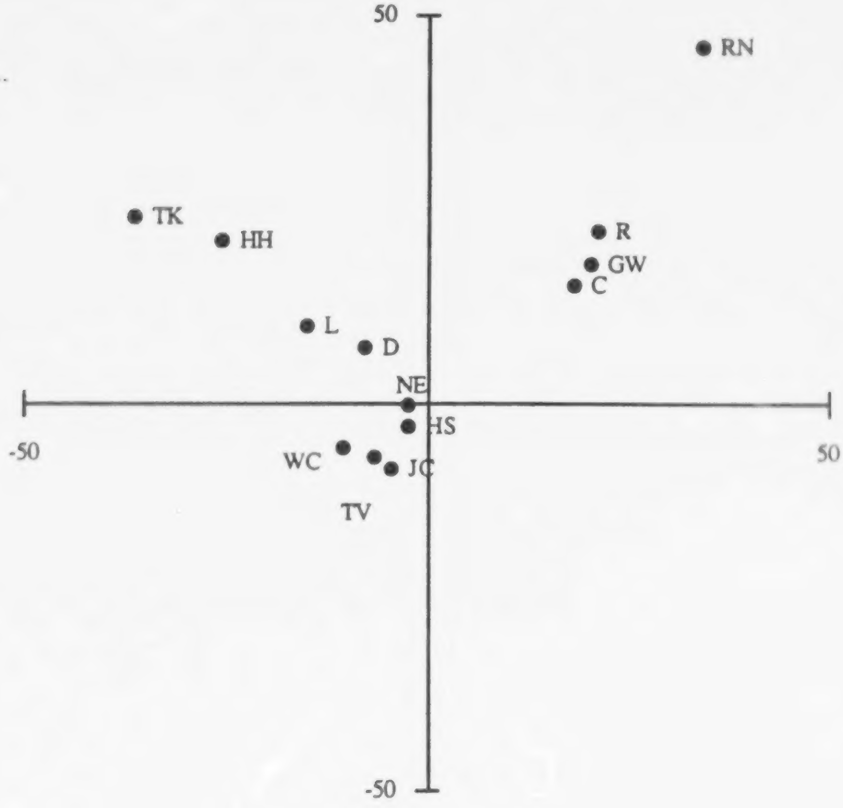
Table 1
Summary Statistics of Thermometer Scores

Person or Group	Mean	Standard Deviation
George Wallace	53.04	26.57
Walter Cronkite	69.60	20.29
John Chancellor	68.26	18.87
Edward "Ted" Kennedy	51.79	28.84
Howard K. Smith	65.26	18.10
Hubert Humphrey	53.15	22.53
Richard Nixon	37.02	29.67
Liberals	53.93	20.28
Democrats	65.53	19.10
Republicans	58.18	19.59
Conservatives	61.64	18.85
TV Commentators	66.39	19.29
Newspaper Editors	61.95	18.23

n = 1025

Figure 1
Estimated Individual and Group Ideal Points



C=Conservatives, D=Democrats, GW=George Wallace, HH=Hubert Humphrey, HS=Howard K. Smith, JC=John Chancellor, L=Liberals, NE=Newspaper Editors, R=Republicans, TK=Ted Kennedy, TV=TV Commentators, WC=Walter Cronkite

Figure 2
Estimated Ideal Points of Survey Respondents

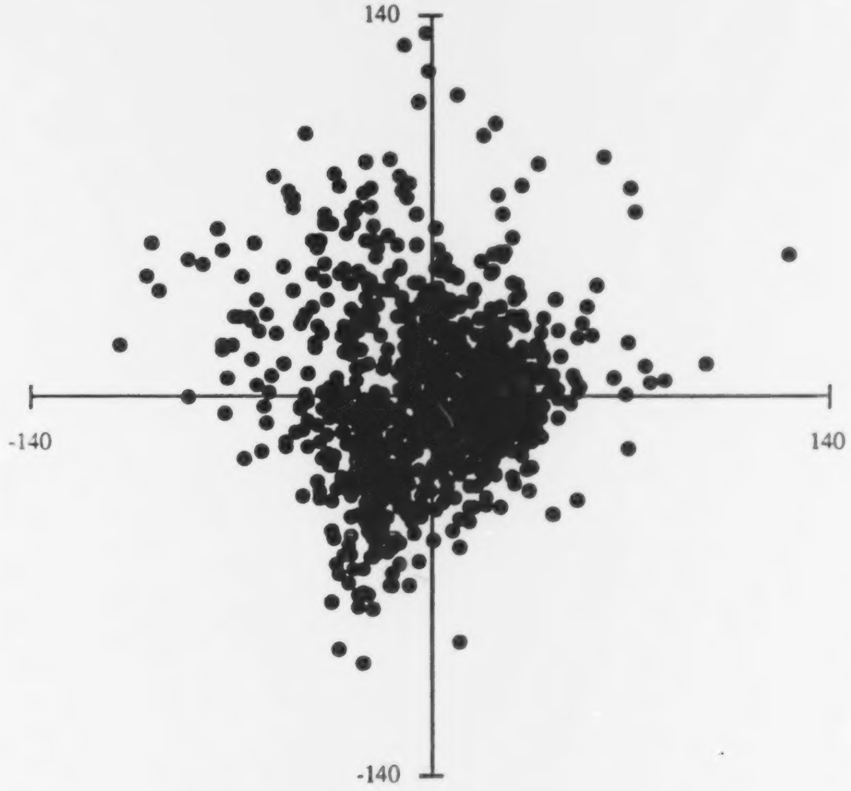


Figure 2
(continued)
Estimated Ideal Points of Candidates in the Voters' Space

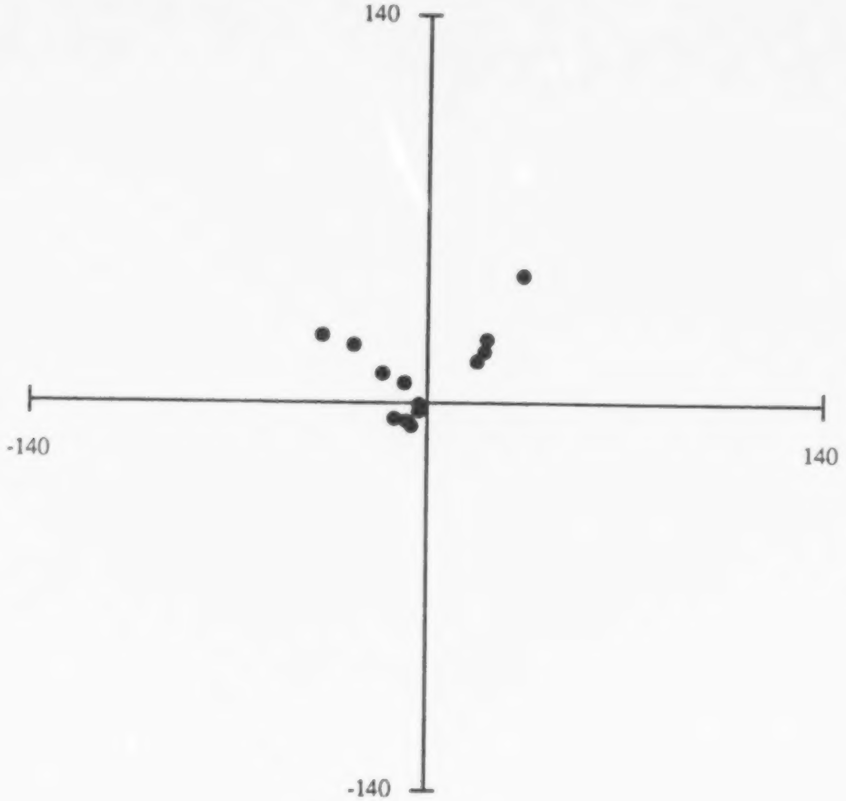
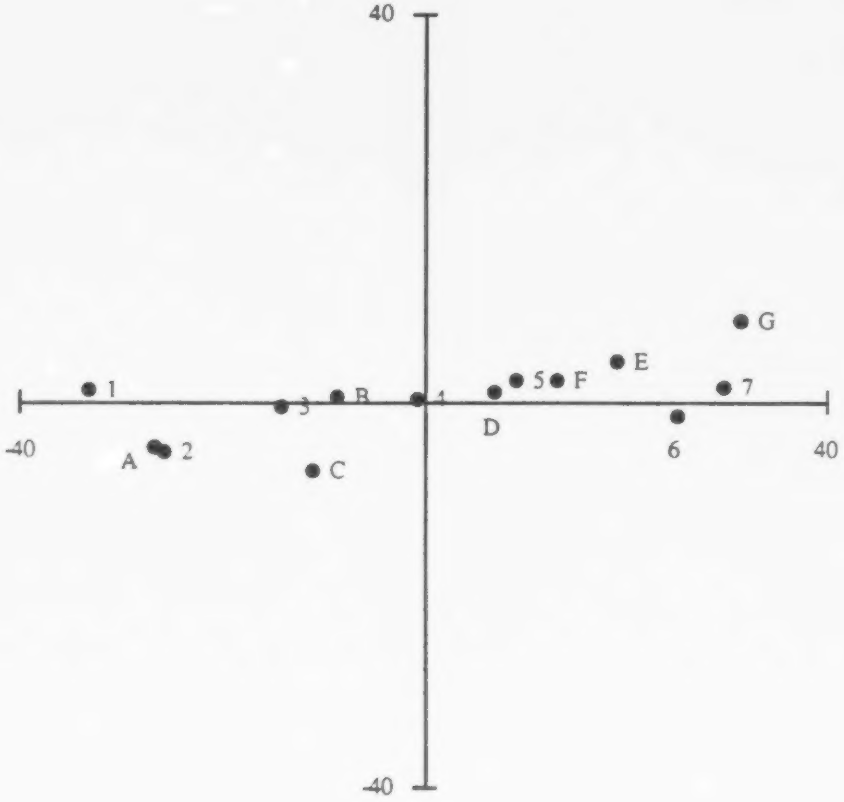
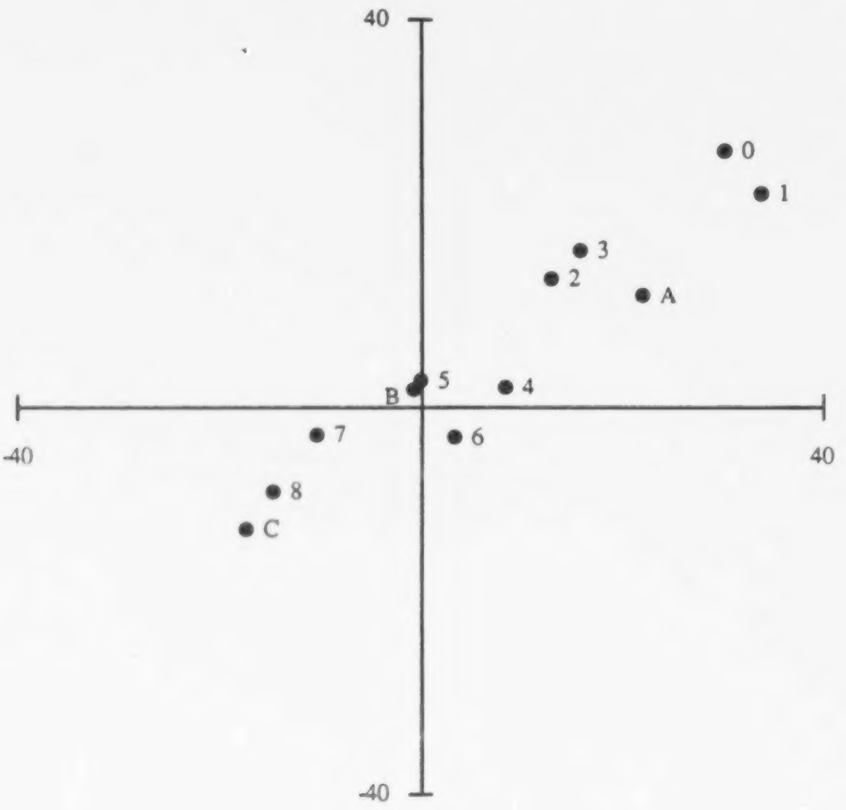


Figure 3
Mean Locations of Party and Ideological Groups



1=Extremely Liberal, 2=Liberal, 3=Slightly Liberal, 4=Middle of the Road, 5=Slightly Conservative, 6=Conservative, 7=Extreme Conservative. A=Strong Democrats, B=Weak Democrats, C=Independent Democrats, D=Independents, E=Independent Republicans, F=Weak Republicans, and G=Strong Republicans.

Figure 4
Mean Locations of Respondents Evaluating News Coverage



"How good a job is being done for the country as a whole by the national TV news?" Responses coded 0 through 8: 0=Very poor job, 2=Poor job, 4=Fair job, 6=Good job, 8=Very good job.

"How fair would you sat that the television and newspaper coverage of the Nixon administration's involvement in the Watergate affair was?" C=Very fair, B=Somewhat fair, A=Not very fair.

Appendix 1
Estimated Ideal Points

Person or Group	x	y
George Wallace	20.554	17.573
Walter Cronkite	-10.505	-5.735
John Chancellor	-4.436	-8.554
Edward "Ted" Kennedy	-36.235	23.808
Howard K. Smith	-2.338	-3.032
Hubert Humphrey	-25.497	20.833
Richard Nixon	34.316	45.559
Liberals	-14.948	9.903
Democrats	-7.590	7.083
Republicans	21.308	21.815
Conservatives	18.435	14.940
TV Commentators	-6.624	-6.878
Newspaper Editors	-2.410	-0.375

Appendix 2
Wording of Survey Questions

Var 2028 Q. A3. One of the things we want to know from this interview is how people get information about politics and current events. Let's start with television.

I'm going to ask you how frequently you watch some TV shows. Just tell me if you watch them frequently, sometimes or never.

Q.A3A. How often do you watch national news in the early morning?

1. Frequently
2. Sometimes
4. Rarely
5. Never

Var 2031 Q.A3D. How often does respondent watch national news broadcasts in the early evening (like Cronkite, Chancellor or Reasoner and Smith)?

1. Frequently
2. Sometimes
4. Rarely
5. Never

Var 2034 Q.A4. Which national evening news do you watch most often?

1. CBS (Cronkite)
3. NBC (Chancellor)
5. ABC (Reasoner-Smith)

Var 2046 Q.A9. Now let's switch to newspapers. Do you read a daily newspaper?

1. Yes
5. No

Var 2165 Q.C11. How fair would you say that the television and newspaper coverage of the Nixon administration's involvement in the Watergate affair was? Would you say it was very fair, somewhat fair or not very fair, or didn't you follow this very closely?

1. Very fair
3. Somewhat fair
5. Not very fair

Var 2204 Summary of respondent's party identification

0. Strong Democrat
1. Weak Democrat
2. Independent--Democrat
3. Independent-Independent
4. Independent-Republican
5. Weak Republican
6. Strong Republican

Var 2250 Q.H4. (Interviewer: Hand respondent show car H4, gray.) Now I'd like you to make some ratings of several important organizations. As I read each organization, think about how good a job you feel it is doing for the country as a whole, and just give me the number from the card that best describes how you feel. How good a job is being done for the country as a whole by the national TV news?

0. Very poor job
1. .
2. Poor job
3. .
4. Fair job
5. .
6. Good job
7. .
8. Very good job

Var 2305 Q.J11. (Interviewer: hand respondent show card J11.) We hear a lot of talk these days about liberals and conservatives. I'm going to show you a seven-point scale on which the political views that people might hold are arranged from extremely liberal to extremely conservative.

Q11A. Where would you place yourself on this scale, or haven't you thought much about this?

1. Extremely liberal
2. Liberal
3. Slightly liberal
4. Moderate, middle of the road
5. Slightly conservative
6. Conservative
7. Extremely conservative

Var 2338 Q.L1. Now I'd like to get your feelings toward some of our political leaders and other people who are in the news these days. (Interviewer: hand respondent feeling thermometer card L1, white.)

Q.L1A. Our first person is George Wallace. Where would you put him on the thermometer?

Var 2344 Q.L1G. Walter Cronkite--score on the thermometer
Var 2345 Q.L1H. John Chancellor--score on the thermometer
Var 2347 Q.L1K. Edward "Ted" Kennedy--score on the thermometer
Var 2350 Q.L1P. Howard K. Smith--score on the thermometer
Var 2352 Q.L1R. Hubert Humphrey--score on the thermometer
Var 2354 Q.L1T. Richard Nixon--score on the thermometer
Var 2358 Q.L2C. Liberals--score on the thermometer
Var 2364 Q.L2J. Democrats--score on the thermometer
Var 2366 Q.L2M. Republicans--score on the thermometer
Var 2369 Q.L2Q. Conservatives--score on the thermometer
Var 2377 Q.L2Y. T.V. Commentators--score on the thermometer
Var 2378 Q.L2Z. Newspaper editors--score on the thermometer

Note: The following explanation of the feeling thermometer was included in the questionnaire and read by the interviewer to the respondent:

I have here a card on which there is something that looks like a thermometer. We call it a feeling thermometer because it measures your feelings towards these people. Here's how it works. If you don't feel particularly warm or cold toward a person, then you should place him </her> in the middle of the thermometer, at the fifty degree mark. If you have a warm feeling toward a person, or feel favorably toward him </her>, you would give him <her> a score somewhere between fifty and one hundred degrees, depending on how warm your feeling is toward that person. On the other hand, if you don't feel very favorably toward a person--that is, if you don't care too much for him </her>--then you would place him </her> somewhere between zero and fifty degrees. Of course if you don't know too much about a person just tell me and we'll go on to the next name.

The interviewer was instructed to take some time to explain how the thermometer works, and to show the respondent how to locate an individual with degree labels. If the respondent gave a range, the midpoint was coded rounding to the nearest odd number if necessary.

Family Communication Patterns and Family Functioning: A New Look at an Old Construct

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Family Communication Patterns and Family Functioning: A New Look at an Old Construct

In mass communication research, the family communication climate has been a focal point of socialization studies. Parental styles regarding the exchange and flow of information and the maintaining of group harmony are viewed as influencing children's attitudes and approaches to the others, including mass media. The Family Communication Patterns (FCP) construct (Chaffee, McLeod, and Wackman, 1966, 1972) was developed as a framework for studying these socializing influences and has become a mainstay of the field. Recent research (Ritchie, 1991; Ritchie and Fitzpatrick, 1990) however, has reevaluated the underlying dimensions of the construct and raised questions about their conceptual meanings. Questions about the construct have implications for interpretation of past research as well as for the direction of future research.

One way to improve our understanding of the construct is by examining family communication within the greater functioning of the family unit. This study does this by comparing the FCP measures to measures used in family social sciences. In contrast to the FCP measures, family assessment and functioning measures highlight the emotional climate of the family including communication. Instruments in this field are primarily used as therapeutic tools, measuring the health of family relationships and the family environment. Thus, they may prove useful in reconceptualizing the FCP construct.

FCP Measures

Family Communication Patterns research grew out of Newcomb's (1953) A-B-X model, which suggests communication allows two people (person A and B) to determine their orientation toward each other and to the object of the communication (object X). The model identifies attitudes which might be positive or negative, such as AB (A's attitude to person B), BA (B's attitude to person A), AX (A's attitude to object X), and BX (B's attitude to object X).

In one of the first studies using this orientation, McLeod, Harburg and Price (1966) examined whether yielding to another's opinion was related to socialization and liking of another. Their findings suggested that those socialized to maintain interpersonal relationships have different communication behaviors than those not so socialized. Follow-up studies looked at the political socialization of adolescents and media use in the family (Chaffee, et al., 1966; Chaffee, McLeod and Atkin, 1971; Chaffee and McLeod, 1971; Chaffee, et al., 1972).

Two orthogonal measures of parent-child interaction were eventually identified. Chaffee, et al., (1971) identified Socio-orientation, corresponding to Newcomb's A-B relationship, which stresses interpersonal harmony in the family, deference to parental authority, and the avoidance of controversy. Concept-orientation, corresponding to the A-X relationship, was defined by Chaffee, et al. (1971) as encouraging children to express ideas openly, to analyze all sides of an issue, and to be able to challenge the views of others even at the risk of confrontation. When their children are younger, families typically are high on socio-orientation. This emphasis decreases as children approach adolescence. Families that emphasize concept-orientation, however, appear to stress that factor uniformly and consistently regardless of the age of their children (McLeod and O'Keefe, 1972).

Chaffee et al. (1971) suggested that families could emphasize either dimension, both or neither and developed a four-fold typology, as represented in Figure 1. Laissez-faire families do not emphasize either dimension. Children may challenge parental views, but are not exposed to new ideas. Protective families stress socio-orientation and harmonious relations. Here, children may not express their own views, nor is there exposure to new ideas. Pluralistic families are concept oriented and place an emphasis on the open expression of ideas. Family harmony is not a goal. Consensual families stress both social and concept orientation. While there is exposure to new ideas in these families, social harmony must be maintained.

Figure 1 about here

While the bulk of FCP research has focused on political socialization, other relationships have been explored. Among the variables that have been related to FCP measures are the resolution of television program-choice disputes (Dimmick, 1976), consumer skills (Carlson, Grossbart, and Walsh, 1990), materialism (Moore and Moschis, 1981), materialist values in the U.S. and West Germany (Tims, 1986), children's interpretations of television (Austin, 1989), flow of information in the family (Ritchie, 1988), and the transmission of parental political outlook to children (Lieber and Ribak, 1992).

Recently there has been some controversy about the conceptual meanings of the FCP dimensions (Ritchie and Fitzpatrick, 1990; Ritchie, 1991). The meaning of the socio-dimension is especially questioned. Rather than family harmony, the dimension seems to reflect parental power over children. Because it encourages a free exchange of ideas, the concept dimension may be a better predictor of family harmony. Ritchie and Fitzpatrick (1990) revised the FCP dimensions into "conversation orientation" and "conformity orientation," and Ritchie (1991) concludes that socio-orientation may be more narrowly defined as parental assertion of power and control.

Exploring the relationships between the traditional FCP concepts with measures of family functioning may identify more clearly what the concept and socio dimensions mean.

Family Assessment Measures

Research in family social science may provide a greater understanding of family communication patterns. Family social science is a multidisciplinary field that integrates and utilizes research from a number of areas, although much is from psychology and counseling. Research in family social science assess family relationships, therapy, family economics and the family as a social system in society.

"Family functioning" is measured by both clinical observations and family members' self reports of different family interactions such as problem solving and self expression. Family assessment research has been conducted in evaluating families dealing with major problems, such as alcoholism or a major illness (Moos, 1990; Epstein, Baldwin, and Bishop, 1983). The measures have also been used in assessing families at risk who might benefit from therapy (Akister and Stevenson-Hinde, 1991) and in marriage therapy (West, 1988). Family assessment measures have been developed and rigorously tested and continue to be refined to be used in prevention and intervention programs dealing with family problems. The many dimensions of family functioning upon which families are defined may help further explain differences in families within the FCP dimensions of concept- and socio- orientation. Such an exploration has not been previously conducted, and the utilization of what may be related measures from another discipline may help further clarify the FCP dimensions.

Two major family social science measures will be utilized in this analysis. Bloom's (1985) factor analysis of family functioning self reports yielded several indices which may be useful in understanding FCP further. Bloom conducted factor analyses of various family assessment devices, including the Family Environment Scale (FES), the Family Assessment Measure (FAM), the Family Adaptability and Cohesion Evaluation Scales (FACES), and the Family Concept Q-Sort.[1] Bloom found interrelationships among many indices and created revised measures which represent many similar underlying scales from these assessment devices.

Bloom conducted phases of different factor analyses using the four family assessment measures described above and found many redundant indices from the four measurements. Bloom eliminated redundant items and indices and created some indices in adapting the many different dimensions into one study of family functioning. Bloom's analysis identified a number of dimensions of family functioning, the following of which will be examined with regard to their relationship to FCP concept- and socio- orientation dimensions: cohesion, which involves family interaction and support; expressiveness, regarding whether families discuss problems and sharing opinions; family sociability, which addresses family parties and being with others; democratic family style, which involves having a say in decision, rules and problems; and authoritarian family style, which deals with parents as the decision and rule makers. Rather than test the individual measures from the four above mentioned family functioning scales, selected revised dimensions of Bloom (which eliminate redundancy between the four scales) will be used in this study.

In addition to testing Bloom's family assessment indices in relation to concept- and socio-orientation of FCP, dimensions from the McMaster Family Assessment Device (FAD) (Epstein, et al., 1983) may also have important relationships with FCP and may provide an opportunity to understand further the two FCP dimensions and what elements in the family they may identify. The FAD measure will also be tested, as it is a major tool in family functioning research and was not one of the four studies in Bloom's analysis.

The FAD was developed from the McMaster Model of Family Functioning, which defined the emotional health and normality of the family (Epstein, Bishop, and Baldwin, 1982). The FAD was developed to be a screening instrument which would identify problem areas in a family (Epstein et al., 1983). Dimensions of the this measure which may relate to the FCP dimensions include problem solving, which involves family members working together to solve problems; communication, which involves family members conveying clear and direct messages with each other, being up front and honest with others; and behavior control, which addresses the presence and understanding of standards a family maintains and the rules by which a family lives.

There has been no comparison of the Family Assessment Device and Bloom's family functioning indices to the concept-orientation and socio-orientation dimensions of FCP. Examining the relationship of dimensions of the FAD and from Bloom may provide greater understanding into what family relationship characteristics are more prevalent in different family types identified in FCP. However, we do not suggest that the dimensions examined here define what may be the "full" dimensions of concept-orientation or socio-orientations. This study will explore prevalent dimensions in family functioning research that appear conceptually to be related to some degree to the FCP dimensions. Other dimensions from other family social science research could be explored in future analyses to attempt to get a clear picture of what dimensions from the family social science discipline may be related to FCP.

Hypotheses

This study will examine the relationship between dimensions of family functioning identified above[2] and the original conceptualizations of the FCP dimensions of socio-orientation and concept-orientation, to examine if patterns similar to those discussed by Ritchie (1991) and Ritchie and Fitzpatrick (1990) are found regarding the two dimensions. In exploring relationships between the family functioning scales and the FCP dimensions, we are only examining them for their relationships with socio-orientation or concept orientation. This examination will attempt to understand further these two dimensions rather than the typology of families that involve the combination of these two dimensions. After an assessment of the relationships of the family functioning dimensions with the FCP dimensions, a brief exploratory analysis will be conducted to identify if any of these family functioning dimensions are more related to one of the four family types than the others.

With regard to Bloom's index of expressiveness, which focuses on a family's ability to discuss problems and reach solutions, we predict expressiveness to be positively related to concept orientation (H1). In families which encourage the open exchange of ideas as in high concept oriented families, such expressiveness is likely to exist.

Bloom's cohesion dimension, which addresses a family's togetherness and support, is predicted to be positively related to concept orientation (H2). In high concept oriented families which encourage discussing and challenging ideas, there may exist greater overall cohesiveness because the family is open to such communication. This construct is similar to Austin, Roberts and Nass's (1990) concept of warmth, regarding supportive communication and involvement within the family, which has previously been found to correlate with concept orientation (Ritchie, 1991).

The democratic family style index, which examines "the extent to which decision making is based upon full participation of all family members" (Bloom, p. 237), is predicted to be positively related to concept orientation of FCP (H3). High concept-oriented families are likely to function in a democratic manner of participation and decision making by all family members.

Family sociability, which examines how the family socializes and maintains friendships with others, is predicted to be positively related to the traditional socio-orientation dimension of FCP (H4). It may be more likely for high socio-oriented families in which harmony is maintained inside the family to also maintain harmonious relationships outside the home, and possibly with other socio-oriented families who emphasize similar goals in their families.

The authoritarian family style index focuses on "the extent to which parents are the locus of rule making and punishment in the event of rule breaking" (Bloom, p. 237). This index is predicted to be positively related to socio-orientation (H5). Families who emphasize harmony and avoid controversy may be likely to have power and decision making centralized in the parents.

Epstein et al.'s (1982) FAD index of problem solving is predicted to be positively related to concept orientation (H6). In concept oriented families which encourage open expression and challenging of ideas, problems solving is likely to involve all family members.

The FAD dimension of communication is predicted to be positively related to concept orientation(H7). Concept oriented families are likely to encourage clear expression of ideas directly to other family members.

Epstein, et al.'s (1982) dimension of behavior control is predicted to be positively related to FCP traditional concept of socio-orientation (H8). This dimension is likely to tap the control element of socio-orientation more than the harmony element of the dimensions, although socio-oriented families ,which stress keeping harmony and not getting involved in controversy, may be more likely to work to control their reactions to others and be organized in other factors of family life.

Method

Subjects

This study is based on a convenience sample of 337 undergraduates at a large Midwestern university. Respondents were found to be predominantly from two-parent households (more than 80%), from suburban communities, with a majority reporting middle to upper-middle class family economic status. We do not suggest a representative sample was obtained for this study, and therefore we do not suggest these results are appropriate for generalization to the population of this age group which includes many single-parent homes, rural and urban residence, and families of lower income levels. This convenience sample was used expressly for the purpose of examining the relationships between the traditional FCP dimensions and measures from family social science research of family functioning.

We also acknowledge at this point that the FCP research typically studies adolescents while they are teenagers, not studying them through self report reflection of young adults. This study is an initial exploration into understanding the relationship of FCP's concept- and socio-orientation with what may be related dimensions from family social science research, and we do not mean to suggest that retrospective reports of college students are equivalent to real time measures of adolescents. If we do find relationships with this group of subjects, the next step would be to replicate the study with respondents who are presently adolescents.

Procedure

Participants were asked to complete a questionnaire about their family life when the subjects were between the ages of 12 to 15 years old. The instrument included a battery of the 10 original FCP questions, items from the McMaster Family Assessment Device, and items from Bloom's family functioning scales, as well as demographic questions for descriptive purposes. The FCP and family social science items were randomly ordered and were not clustered according to their source or conceptualization.

Measures

FCP Measures

The items used in this survey represent the standard measurements of the socio-orientation and concept-orientation, as developed over time (Chaffee, et al., 1966; Chaffee, McLeod and

Atkin, 1971; Chaffee and McLeod, 1971; Chaffee, et al., 1972). While Ritchie and Fitzpatrick have explored the use of different items in reformulating the dimensions that may exist in family communication, this study will explore the relationship of concepts not previously compared with the standard traditional FCP items, as identified below. The items which compose concept-orientation stress open discussions, sharing ideas and decisions. The items which compose socio-orientation emphasize parental control over children, and maintaining harmony in relationships with others. The FCP items were measured regarding frequency one's parents made statements similar to the FCP statements on 4-point scales which ranged from "frequently" to "never."

--Concept orientation

- Parents say that you should look at both sides of an issue.
- Parents admit that you may know more about some things than adults do.
- Parents talk to you about things like politics and religion, where one person takes a different side from others.
- Parents emphasize that it is important to get your ideas across even if others don't like it.
- Parents emphasize that every member of your family should have some say in the family decisions.

--Socio- orientation

- Parents tell you that their ideas are correct and that you shouldn't question them.
- Parents answer your arguments by saying something like, "You'll know better when you grow up."
- Parents say that you should give in on an argument rather than make people angry with you.
- Parents emphasize that you should not argue with adults.
- Parents emphasize that the best way to stay out of trouble is to keep away from it.

Bloom's Family Functioning Scales

Measures are the items as used in the four scales which Bloom's factor analysis reduced into dimensions which include the five concepts explored in this study. The items which represent cohesion stress the family doing things together and getting along with each other. The measures of expressiveness emphasize discussing problems and expressing their thoughts and feelings. The measures of family sociability involve being with other people and socializing with others as a family. Democratic family style measures discuss decision making by the family as a whole, as well as making rules. Items of authoritarian family style discuss the establishment of rules and consequences in a family, and the control of parent in decision making. Items used from Bloom were measured on 4-point scales which ranged from the statements being "a lot like" one's family to "not like" one's family.

--Cohesion

- Family members really helped and supported one another
- There was a feeling of togetherness in our family
- Our family didn't do things together (r)
- We really got along well with each other
- Family members seemed to avoid contact with each other when at home (r)

--Expressiveness

- Family members felt free to say what was on their minds
- Our family did not discuss its problems (r)
- Family members discussed problems and usually felt good about the solutions
- In our family it was important for everyone to express their opinion
- We didn't tell each other about our personal problems (r)

--Family Sociability

- We were full of life and good spirits
- Our family enjoyed being around other people
- Socializing with other people often made my family uncomfortable (r)
- As a family, we had a large number of friends
- Our family liked having parties

--Democratic Family Style

- Family members made the rules together
- Family members felt they had not say in problem solving (r)
- Each family member had at least some say in major family decisions
- Parents and children in our family discussed together the method of punishment
- In our family, parents did not check with the children before making important decisions (r)

--Authoritarian Family Style

- Parents made all of the important decisions in our family
- There was strict punishment for breaking rules in our family
- Family members were severely punished for anything they did wrong

- There were very few rules in our family (r)
- Nobody ordered anyone around in our family (r)

Epstein, et al.'s (1983) Family Assessment Device Scales

Measures from the FAD which define the communication dimension stress sharing feelings and being honest within a family. The problem solving measures emphasize resolving problems together and working together. Behavior control measures stress the establishment of rules in a family, as well as guidelines for emergencies. Items used from Epstein, et al. (1983) were measured on 4-point scales which ranged from the statements being "a lot like" one's family to "not like" one's family.

--Communication

- When someone is upset the others know why
- You can't tell how a person is feeling from what they're saying (r)
- People come right out and say things instead of hinting at them
- We are frank with each other
- We don't talk to each other when we're angry (r)
- When we don't like what someone has done, we tell them

--Problem Solving

- We usually act on our decisions regarding problems
- After our family tries to solve a problem, we usually discuss whether it worked or not
- We resolve most emotional upsets that come up
- We confront problems involving feelings
- We try to think of different ways to solve problems

--Behavior Control

- We don't know what to do when an emergency comes up (r)
- You can easily get away with breaking the rules(r)
- We know what to do in an emergency
- We have rules about hitting people
- We don't hold to any rules or standards (r)
- If the rules are broken, we don't know what to expect (r)
- Anything goes in our family (r)
- There are rules about dangerous situations

Tables 1 and 2 present the inter-item correlations and reliabilities for each of the scales. The reliabilities for the FCP dimensions were moderate at .61 for the socio-dimension and .74 for the concept dimension. The FAD dimensions reliabilities ranged from .76 to .82. In addition, two separate tests of Bloom's inter-item correlations and reliabilities are included for comparison. Reliability assessments in this study were consistent with Bloom's findings, with most reliability estimates close to those reported by Bloom.

Table 1 about here

Table 2 about here

Results

Many of the scales were found to correlate significantly with FCP socio- and concept-orientation factor analysis scores. These are presented in Table 3. We predicted the following dimensions to be positively related to FCP concept-orientation: Cohesion, Expressiveness, Democratic Family Style, Problem Solving, and Communication. The following dimensions were predicted to be positively related to FCP socio- orientation: Family Sociability, Authoritarian Family Style, and Behavioral Control.

Table 3 about here

Bloom's expressiveness scale exhibited a high correlation with FCP concept-orientation (r = .65), which provides support for H1. In families that emphasize concept- orientation, open expression of ideas and opinions is likely to be encouraged. While a positive relationship with concept-orientation was predicted, we also found a negative relationship between expressiveness and socio-orientation (r = -.23).

Cohesion was correlated with concept-orientation (r = .52), supporting H2, but not significantly correlated with socio-orientation. A concept-oriented family is more likely to engage in activities together, offer each other help and support, and stress positive family experiences.

The Democratic Family Style scale was positively correlated with concept-orientation (r = .63) as predicted by H3, and negatively with socio-orientation (r = -.28). This family style is likely to be common in concept-oriented families, as they encourage participation in discussions and decision-making.

Family Sociability did not correlate with socio-orientation as predicted by H4, but was moderately correlated to concept- orientation (r = .44). Families with a high concept-orientation may encourage social interaction and harmony. Socio-orientation may not be related to harmonious relationships with others outside the family, although the results suggest concept-orientation is related to such harmony.

The Authoritarian Family Style was positively correlated with socio-orientation as predicted by H5 (r = .46) and negatively correlated to concept-orientation (r = -.17). In an authoritarian family, decisions and family rules are controlled primarily by the parents, with little discussion allowed.

The FAD scale of problem solving was positively correlated with concept orientation, as predicted by H6 (r = .56). Concept-oriented families are more likely to discuss problems, make decisions, and reach solutions as a group.

The FAD dimension of communication was positively correlated with concept- orientation (r = .53), supporting H7, and negatively correlated with socio-orientation (r = -.23). Families high on concept- orientation encourage open communication, whereas socio-oriented families avoid communication that leads to confrontation.

Although behavior control was predicted to be correlated with socio-orientation in H8, it was not; rather, it was negatively correlated with concept-orientation (r = -.38). While it is unclear at this point how behavior control and socio-orientation relate, it appears that concept-orientated families are relaxed when it comes to rules and expected behavior. While concept-oriented families have open communication between family members, they do not appear to have the organization regarding rules for behavior.

As many of the items used in the FAD and by Bloom seem to have similarities, the correlations between the two along with their correlations with the FCP dimensions provide triangulation; for instance, we can compare scales which had similar correlations with the FCP dimensions and explain their similarity by higher correlations between the two family functioning scales. While no hypotheses were formed regarding the relationship of Bloom's scales with Epstein, et al.'s scales, such an examination may assist in further understanding the above results regarding their relationships with the socio- and concept- orientation scales of FCP. Table 4 represents the correlations of Bloom's family functioning scales and Epstein, et al.'s family assessment scales.

Table 4 about here

Moderate correlations were found for many of the scale comparisons, which suggest many of these scales are related to each other to some degree. The most substantial relationships are between the scale of problem solving with cohesion (r=.48), family sociability (r=.48), and democratic family style (r=.45). The greatest correlation between communication and a family functioning scale of Bloom's was with family sociability (r=.38). Behavior control related most strongly with authoritarian family style (r=.40), as control is an important element of this scale. Behavior control also had a moderate correlation with democratic family style (r=.30), as democratic families have clear rules for behavior (although they are discussed and agreed upon by everyone in the family, as opposed to authoritarian families), and know what to do in emergencies, as they may have openly discussed and agreed to such a process. Overall, we see similar measurements with related correlations with the FCP dimensions.

A further examination of these family assessment scales with regard to FCP was taken in analyses of variance of the scales across the four FCP types (laissez-faire, protective, pluralistic, consensual). Table 5 displays the means of the scales for each group, and also indicates which groups differed significantly from each other. Overall, it appears that while differences do exist among family types, they occur primarily between people who grew up in low concept-orientation and high concept-orientation families, with almost no significant difference found in the results of the family functioning scales between students who grew up in low socio-orientation versus high socio-orientation homes. The previously reported lack of correlations of scales with socio-orientation, along with these results which cannot successfully distinguish people along the socio dimension, suggest the measures examined here does not fully encompass the elements of the socio-orientation.

Table 5 about here

Discussion

This study examines the socio and concept dimensions of FCP by considering their relationship to dimensions of family functioning. The use of multiple family functioning measures further clarifies what the FCP dimensions may involve and supports alternatives interpretations of the dimensions. While we found support for predicted relationships between family functioning dimensions and concept- orientation, we found limited support for the predicted relationships regarding family functioning and socio-orientation.

Bloom's cohesion, expressiveness, family sociability and democratic family style scales all demonstrate moderate correlations with FCP concept-orientation, as do the McMaster scales of communication and problem solving. Additionally, FCP concept-orientation appears to tap into several aspects of family functioning, notably those in which interpersonal communication plays a dominant role. Family sociability was also related to concept-orientation. Socializing appears to revolve around the free exchange of ideas in concept- oriented families rather than on the emphasis on harmonious relationships in socio-oriented families.

These additional relationships suggest that concept-orientation is a broader dimension that has been previously conceptualized. This conclusion is consistent with Ritchie's (1991) reconceptualization of concept-orientation, in which he suggests the "objectives of harmonious social relationships are positively associated with concept-orientation, and not with socio-orientation" (p. 549). These results support Ritchie's suggestion that harmonious relationships are more consistent with concept-orientation rather than with socio-orientation.

Socio-orientation appears to be more narrowly defined according to our findings, although our measures likely did not tap the socio-orientation dimension completely. The strong positive correlations between FCP socio-orientation and Bloom's authoritarian family style, which indicates that parental control remains a strong force in the socio-oriented family. The lack of relationship between socio-orientation and behavior control and family sociability suggest the socio-orientation construct of FCP may be different from earlier conceptualizations. Earlier conceptions of this dimension had stressed the element of harmony, while here it appears to be a construct regarding power and control. As these family functioning scales did not deal directly with family harmony, we cannot conclude socio-orientation is more about control and less about harmony. An examination of other family assessment measures may provide other scales which better measure the concept of harmony in a family that would enable a more adequate comparison and evaluation regarding the socio-orientation dimension of FCP.

Our study provides construct validation of findings by Ritchie (1991) and Ritchie and Fitzpatrick (1990), which revised the FCP dimensions. Their revised dimensions "conversation orientation" and "conformity orientation," appear to fit more appropriately to the findings in this study than the traditional FCP dimensions. Ritchie's conclusion regarding a narrower definition of socio-orientation as parental assertion of power and control would also be likely to be supported by the above findings regarding constructs from family functioning which correspond highly to the socio-orientation concept of FCP. Our findings also support Austin's (1993) concept of control as rulemaking (by parents alone) may be associated with socio-orientation.

Problems associated with defining socio-orientation may be affiliated to some degree with survey participants, in this case, college students reflecting on their childhood. Parents and children may simply have a different understanding of socio-orientation and may use more broad or narrow definitions of those family elements, as Ritchie (1991) and Austin (1993) also suggest. It would be useful to test such an instrument as above with both children and parents to identify congruency and explore further if different responses between parents and children are due to measurement problems regarding reliability or if they represent truly different interpretations of family relationships (Ritchie, 1991; Ritchie and Fitzpatrick, 1991)

The use of family assessment scales to study family communication patterns may provide greater understanding of family socialization. The family assessment scales tested herein shed light on many issues related to FCP, and these findings would appear to support the FCP concept-orientation and to a lesser degree the socio-orientation dimensions established in previous FCP research. We suggest that other family assessment scales be studied in relation to FCP measures, leading to findings that may enhance FCP with a family assessment perspective. It is particularly encouraging that many of the family assessment scales have already been tested and revised to achieve greater reliability and validity.

Future research should include replications of this study to verify and validate the relationships between FCP concept-orientation and the democratic family style, problem solving in the family, and family expression, cohesion and sociability. Additionally, the relationships between FCP socio-orientation and the authoritarian family style invite further scrutiny. The family assessment measures should be explored further to find reliable scales of assessment that may more effectively tap the family harmony aspect of socio-orientation families.

A major limitation of this study that should be resolved in future research, even a replication of the measures used here with the addition of more appropriate "harmony" based items, would be using an age appropriate sample of adolescents. As has been done in previous FCP research, an examination of these dimensions from the point of view of both children and parents is helpful in assessing the family climate with input of all members. Asking college students to retrospectively recall their relationship with their parents when they were 12 to 16 years old can be a difficult challenge. Many elements are forgotten over time which may distort recollections. The present child-parent relationship may also cloud past memories of that relationship, which may lead to inaccurate reports of that time. The findings of this study, which provide support that relationships between family functioning and family communication patterns exist, encourage a follow-up study. The next appropriate step would be to conduct a similar study, possibly testing further elements that may be related to socio-orientation, with adolescents. While family communication patterns have been studied over the past 30 years in mass communication research, so has family functioning been studied in family social science. It is surprising that as these two research areas developed almost simultaneously, there has been little or no attention to each other across disciplines. Conceptually, many of the constructs examined in family assessment research appeared to be related to how concept-orientation and socio-orientation are defined. A number of these constructs were found to be related to the FCP dimensions, and could prove to be a fruitful area in attempts to define concept- and socio-orientation within families, as we have seen in the earlier years of FCP research, or redefine how these dimensions fit the modern family, as has been done recently.

[1] The Family Environment Scales is used to evaluate the quality of interpersonal relationships in a family, personal growth of family members and family organization (Moos, 1990; Moos & Moos, 1976). Indices included expressiveness, independence, family organization and parental control. Skinner, Steinhauer and Santa Barbara's (1983) Family Assessment Measure evaluates interactions within the family and family reactions to the larger social environment, and includes indices such as communication, affective expression, and control. The Family Adaptability and Cohesion Evaluation Scale, created by Olson, Russell & Sprenkle (1983) analyzed two core concepts of the family: family cohesion, which they define as the individual autonomy of and emotional bonding between family members, and family adaptability, which is the ability to alter the power, roles and relationship structures in a family in response to its social environment. The Family Concept Q-Sort (Van der Veen and Novak, 1971) investigates family members' perceptions of real relationships within the family and compares them with how members perceive the ideal family interact.

[2] While many dimensions are identified in Bloom's scales and the FAD, only those concepts we believe to be related to the FCP concept or socio dimension were examined in this study.

Figure 1

FCP typology

		Concept-Orientation	
		Low	High
Socio-Orientation	Low	Laissez-Faire	Pluralistic
	High	Protective	Consensual

Table 1

Comparison of Reliability and Inter-item correlations

	Current Study		Bloom	
Scale	Inter-item Correlation	Cronbach's Alpha	Inter-item Correlation	Cronbach's Alpha
Cohesion	.60	.88	.54 .61	.85 .89
Expressiveness	.49	.83	.51 .55	.84 .86
Family Sociability	.42	.78	.34 .53	.71 .85
Democratic Family Style	.38	.75	.44 .50	.79 .83
Authoritarian Family Style	.19	.54	.31 .28	.69 .66

Table 2

FCP Scales and FAD Scales
Reliability and Inter-item correlations

	Inter-item Correlation	Cronbach's Alpha
FCP Socio-orientation	.24	.61
FCP Concept	.36	.74
Problem Solving	.48	.82
Behavior Control	.34	.80
Communication	.35	.76

Table 3

Correlations between FCP Dimensions and Family Functioning Constructs

	FCP Concept	FCP Socio
Bloom (1985) Scales		
Cohesion	.52 ***	-.10 n.s.
Expressive	.65 ***	-.23 ***
Family Sociability	.44 ***	-.07 n.s.
Democratic Family Style	.63 ***	-.28 ***
Authoritative Family Style	-.17 ***	.46 ***
FAD Scales		
Problem Solving	.56 ***	-.19 **
Communication	.53 ***	-.23 ***
Behavior Control	-.38 ***	.10 n.s.

** = $p \leq .01$, *** = $p \leq .001$

Table 4

Correlations between Family Functioning Constructs

	Problem Solving	Communication	Behavior Control
Cohesion	.48***	.28***	n.s.
Expressive	.38***	.19**	n.s.
Family Sociability	.49***	.38***	-.25***
Democratic Family Style	.45***	n.s.	.30***
Authoritative Family Style	n.s.	-.31***	.40***

** = $p \leq .01$, *** = $p \leq .001$

Table 5

ANOVA of Family Functioning Scales by FCP Category

	Laissez Faire	Protective	Pluralistic	Consensual
Cohesion	2.79ab	2.81cd	2.95ac	3.04bd
Expressiveness	2.77ab	2.74cd	3.02ac	3.05bd
Family Sociability	2.52ab	2.54cd	2.92ac	2.99bd
Democratic Family Style	2.62ab	2.65cd	2.83ac	2.86bd
Authoritarian Family Style	2.73a	2.82b	2.41abc	2.76c
Communication	2.46ab	2.34cd	3.09ace	2.85bde
Problem Solving	2.13ab	1.99cd	2.84ac	2.75bd
Behavior Control	2.29ab	2.17	1.86a	1.91b

Note: All F tests were significant for the above scales. Means which are significantly different from each other using the Student-Neuman-Keuls procedure are identified by the same subscripts.

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Running head: AGENDA SETTING RECONSIDERED

Agenda Setting Reconsidered: The Process at Work in Music Radio.

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Abstract

Agenda setting research has, so far, stayed exclusively in the realm of issue salience in regards to political or news items. This paper argues that the agenda setting theory has applications outside the issue salience realm. One of those applications is the creation of the popularity of songs through music radio. Music radio is similar to a news organization in its ability to impress a rank order agenda onto its audience. Music radio's agenda is, however, song popularity rather than issue salience. This paper suggests a traditional agenda setting project be done in the realm of music radio.

Agenda Setting Reconsidered: The Process at work in Music Radio

When McCombs and Shaw's (1972) original agenda setting study appeared in the pages of Public Opinion Quarterly, it claimed two accomplishments. First, it isolated and named a function of the mass media hinted at throughout communication history by Lippman (1922), Mills (1956), Berelson, Lazarsfeld, and McPhee (1954), Cohen, (1963), McLeod (1965), and others. In addition, the research rebutted the limited effects theory offering a heuristic paradigm that would produce volumes of work (Kuhn, 1970; Winter & Eyal, 1981; Rogers & Dearing, 1988; Burd, 1991; Kosicki, 1993).

In 25 years and more than 200 articles on agenda setting, the research has not strayed from the realm of political and news issue salience (McCombs & Shaw, 1993; Rogers, Dearing & Bregman, 1993). Although different methods of research, such as longitudinal designs (Erbring, Goldberg & Miller, 1980), public and individual level data (Shaw & McCombs, 1977; McLeod, Becker & Byrnes, 1974), path analysis (Wanta, 1994), and experimental research (Iyengar & Kinder, 1987), have all been used, it has always been to test the impression of a ranked order of issues from media to audience (Weaver & Elliot, 1986; Zhu, 1992; Schoenback & Semetko, 1992).

The purpose of this paper is to offer a new area of research for agenda setting, music radio.

Protess and McCombs wrote that leading theories will go through similar cycles of recreation and rebirth. "So it goes with agenda setting" (Protess and McCombs, 1991, p. 97). For a theory to continue to thrive, new areas must be explored (Severin & Tankard, 1992; Conant, 1951). In Wicker's (1985) eleven specific suggestions for generating new perspectives on familiar research, he notes moving a theory outside of its domain. That suggestion helped to bring about this paper.

It should be stated here that radio is not alien to agenda setting research. Studies that have included radio newscasts as part of a mass media content analysis have shown positive results (Siune & Borre, 1975; William & Larsen, 1977; McCleneghan, 1987). Applying journalistic terms to music radio is also not a new concept. Kelliher (1981), Rothenbuhler (1985), and Keith (1991) have all studied radio music directors in terms of their being gatekeepers.

This paper does not suggest studying radio's ability to impress an agenda of issue salience through newscasts. The suggestion is that just like a medium can impress a rank order of issue importance upon an audience, music radio has the same ability to impress a rank order of song popularity onto an audience.

Just as an audience member can see one issue as more important than another due to differing amounts of news coverage, that audience member can also see one song as more popular than another due to radio airplay emphasis. The key to this argument is that salience and popularity are the same construct.

McCombs and Shaw wrote, in their twenty-fifth anniversary symposium on agenda setting, that "major new research venues and new insights will be called into existence" (McCombs & Shaw, 1993, p. 65). In that vein, this paper offers music radio as a new venue for agenda setting research.

Music Radio

Kaplan writes that theories have what he termed "explanatory shells" (Kaplan, 1969, p. 299). This shell holds the variables, terms, and situations that must be present for a theory to be successfully tested. With this in mind, music radio must be explored in terms of its ability to accept agenda setting. The explanatory shell present in an agenda setting study on music radio must be similar to the shell surrounding a traditional agenda setting study. Otherwise, agenda setting cannot be reasonably tested in music radio.

Agenda setting has been closely linked with a specific research methodology: mass media content analysis correlated with public opinion polls (McCombs & Shaw, 1972; Hill, 1985; Heeter, Brown, Soffin, Stanley, & Salwen, 1989; Eaton, 1992, Roberts, 1992; Rogers, et. al., 1993). Taking the media content analysis side of the equation first, music radio acts in a parallel fashion to the news media.

A newscast will make a point of emphasizing one story over another. It is this emphasis that leads to the rank order of agendas (Reese, 1991). This emphasis has taken many researched forms including story placement in a newscast (Behr & Iyengar, 1985), photo size (Wanta, 1988), and announcer framing (Gitlin, 1986; Iyengar & Kinder, 1987).

Music radio delivers songs to its audience in a similar fashion. Although a music radio station might choose 40 songs to make up its on-air play-list, the songs are not played one through 40 and then back to number one to play the list again.

A play-list is broken into rotations, ensuring that the songs perceived by the music director to be the most popular are played most often (Paiva, 1983; Keith, 1987; Frith, 1988). The top rotation might be only six songs with two being played every hour. The second rotation might have 18 songs with two played an hour. The third rotation would then include the remainder of the songs from the playlist rotating throughout the day.

This rotation system allows for some songs to be played more often than others. This insures that what the music programmer perceives as most popular plays more often than those songs perceived as less popular.

This play-list emphasis would lead to the rank order emphasis in music radio.

The concept that radio airplay has a hand in the creation of song popularity is, again, not a new idea. Music radio programmers strongly believe their medium makes songs "hits" (Maxwell, 1995; Novia, 1995; Kinosian, 1995; Kojan, 1993; Breen, 1991). Companies that make and sell music have the same belief (Smith, 1989; Baldwin & Mizerski, 1985). Academic writings and research offer evidence to back up these claims.

Early books such as The Psychology of Radio (Cantril & Allport, 1935) and The People Look at Radio (Lazarsfeld & Field, 1946) applaud the medium's ability to create song popularity. Weibe (1940) and Erdelyi (1940) both provide evidence that the more a song is played on the radio, the better chance the song has of becoming popular and selling copies.

Later research by Claude (1979), Rich (1990), and Keith (1991) all continue to state that radio airplay is a strong variable in what makes music popular.

It is assumed in agenda setting that the movement of influence is from the media to the audience (Weaver

& Elliott, 1986; Yagade & Dozier, 1990; Carter, Stamm & Heintz-Knowles, 1992). This stands to reason due to the fact that a newsroom seldom contacts its audience for input on what news items to print or broadcast. The audience learns of the news items when the news medium decides to broadcast them. Yet in radio, the idea of audience research regarding new music is prevalent (Denver, 1991; Eastman, Head, & Klein, 1981; Wrzesinski, 1979). This adds a new variable to an agenda setting study in music radio, the involvement of the listening audience.

When music radio was first being programmed, in the 1920s through 1940s, the concept of audience research was non-existent (Peatman, 1942-43). The choice of what music to play rested solely in the hands of the radio programmer mainly for two reasons.

First, radio was network oriented. Local stations broadcast what was sent to them by their parent station (Claude, 1977). Second, early music radio was concerned with variety. There simply was not a playlist to research. Stations would play upwards of 350 songs each night and overnight. Today, some stations have entire music libraries smaller than that (Pavia, 1983; Alexander, 1994).

By the 1950s, a new medium called television had taken money away from radio networks leaving local stations to fend for themselves. Disc jockeys and Top 40 formats began involving local audiences in the decisions of what songs should be played through audience research (Passman, 1971).

Audience research included following local sales of music, holding dances to contact listeners, and counting jukebox plays (MacFarland, 1979).

In some cases, the audience was the sole decision maker of what songs were popular and what songs should be played (Morthland, 1992). It was easier now for an audience member to contact the person responsible for music choice. In many cases, it was the disc jockey that made all the decision for his or her show. A phone call to the station could sway decisions of what to play.

In 1953, The Bureau of Applied Social Research performed a large study of disc jockeys and their audiences (McPhee, Ennis & Meyerson, 1955). The conclusions of the report stated that radio was now no longer a leader, but a follower of public opinion (Ennis, 1992).

Researching audience tastes through various channels of sales, requests, and contacts continued through the 1960s and 1970s (Balon, 1991; Passman, 1971; Staff, 1973). It was not until the 1980s that the audience was again beginning to be taken out of the choice of new music.

The 1980s saw the rise of a relatively new, more centralized, version of audience research (Pond, 1987). The use of radio consultants had become very popular and those consultants were taking audience research away from local listeners (Helton, 1985; Helton, 1985a).

The consultant would perform research to find national trends and then apply the research results to a local radio station (Rothenbuhler, 1985). This was a return to the network-style programming of the 1940s. One centralized location was making the decisions for many points across the country.

Today, radio programming continues a belief in choosing music with very little, if any, input from local audiences. Music research is still employed, but only after a song has been chosen for airplay (Alexander, 1994a; Harris, 1994).

Listener requests are today given hardly any weight at all due to their being from a small, active portion of the total listening audience (Denver, 1994; Harris, 1994). Programming by requests would be serving only that small group of active listeners.

Programming today is done more by "gut-instinct" than by research (Denver, 1993, p. 34; Love, 1994; Alexander, 1993a). Programmers are selecting music by experience rather than hard data. Audience research is being saved for checking new music picks for mistakes (Kojan, 1992).

It is true that not all radio stations exclude local listeners from music choice, but trade publications are clear that those stations are the exception rather than the rule. Kinosian (1992) writes that this is because of economic reasons. It would be costly to go on a listener's whim.

This discussion is not to say that an audience does not carry any influence on a radio station's play-list. The point here is that the music radio listening audience carries an equal weight in song choice as a news media's audience carries in news story choice. Audience influence in news and new music decision now occurs through peripheral channels such as ratings or complaints.

The second component of the agenda setting equation, noted above, is a public agenda opinion poll. This poll will be correlated with the mass media content analysis.

Remember that agenda setting is positivistic (Burd, 1991). There is an assumption at the beginning of an agenda setting study that while the mass media cannot be held totally responsible for a person's agenda, the media certainly had a hand in creating it (Reese, 1991).

In order for music radio's influence to be studied through agenda setting there has to be some data showing that music radio will have some effect upon its audience. Rich (1990) found such an effect. He wrote that people had a reaction to the music they heard on the radio. His experiment showed the greatest correlation between thoughts and music radio.

In addition, there is a widely held belief that radio can claim some responsibility for music sales. Research upholds this belief. (Baldwin & Mizerski, 1985; Hesbacher; Claude, 1977). Finally, there are the studies noted earlier, in regards to radio's hand in making songs popular, to add support to radio's ability to create an effect.

The public opinion of a music radio listening audience would be collected in the same manner as a traditional agenda setting study: surveys (Rogers & Dearing, 1988) or interviews (Wanta & Hu, 1993). Also in line with a traditional study, a survey or ratings analysis would identify an audience's most listened to radio stations. Locating which station has the greatest, or most specific, audience coverage would aid in making up the content analysis portion of the study (McCombs & Shaw, 1972).

It would seem that a study could be done by simply comparing radio station play-lists and national music charts in the same fashion polls are used in post hoc agenda setting studies (Eaton, 1989; Shaw & Martin, 1992). The national music charts would act as the public opinion polls.

This probably would not offer true results. The national music charts are already skewed towards the radio station play-lists because play-lists are used to create the charts (Billboard, 1994). Billboard does use some audience data, music sales, in creating its music charts, however using sales data means that audience input is not collected in terms of a random sample. A person has to purchase a piece of music before Billboard has any notion of that person's opinion (Burns, 1995).

Using national music charts also has a drawback in that the charts are ordinal scales, a simple ranking. There is no true zero point, thus no exact relation between ranks can be measured (Gravetter & Wallnau, 1991). It can be said, with a certain degree of accuracy, that the song in the number one position is more popular than the song in the number two position.

What cannot be said is how much more popularity number one has than number two.

The content analysis portion of a music radio agenda setting experiment will use playlist data. That type of data does allow for measurement between songs. In this case the measurements will be in terms of number of times the song was played. Comparing that type of data to music charts would not offer solid results.

In addition, national music charts are more of a mass opinion rather than a public opinion due to few people creating the charts for many (Mills, 1956).

The collection of audience data presents the main obstacle in transferring agenda setting to music radio. When an agenda setting researcher undertakes a study, he or she must state what the mass media for the study will be. Some studies will choose only one form of media, such as television (Iyengar & Kinder, 1987) or newspaper (Salwen, 1988), while others will choose a wide range of sources to code (McCombs & Shaw, 1972; Siune & Borre, 1975; Demers, Craff, Choi & Pessin, 1989; Iorio & Huxman, 1993).

Traditional agenda setting researchers have this freedom of source choice because the news covered in or on any given source will be close to the news reported on any other source. Radio music formats do not allow for such combined content analysis. A radio station that programs classical music would probably not share much audience with a radio station that programs heavy metal music. News is similar across formats, music is not.

A study of agenda setting in music radio would require a much more purposive sample of listeners. Audience members would have to be aligned with formats, and then tested. This would also not allow for the parametric statistics traditionally used in agenda setting studies. The purposive sample would call for non-parametric statistics to determine correlations between music format content analysis and public opinion poll data (Gravetter & Wallnau, 1991).

This limitation can be seen as a blessing or a curse. The ability to use only one station, or a combination of like-programmed stations, might be seen as not being representative of the medium. However, the limitation can also be seen as offering the researcher the ability to do many different agenda setting studies across formats with then the ability to compare results.

Agenda setting research has been criticized for sometimes taking too many variables into account (Iorio & Huxman, 1993). This limitation should be welcomed. It will aid in creating a more focused study.

The agenda setting theory is heuristic. It has allowed for a tremendous amount of research covering many different areas within the political or news issue realm. However, now it is time to benefit from agenda setting's heuristic quality by applying the theory to music radio.

Just as a news broadcast has the ability to transfer the impression of issue salience with repeated listening and emphasis, a radio station too can transfer song popularity through repeated listening and emphasis. A public agenda of issue importance is a researchable equal to a public agenda of song popularity.

The above discussion has shown that the

explanatory shell of agenda setting would not be damaged by transferring the theory to music radio. The output of a newsroom and the output of a music radio station are both presented in a fashion that would create a rank order of importance, or popularity, on an audience. It is the purpose of agenda setting to measure the correlation between what a medium broadcasts, or prints, and how closely audience opinions reflect that mediums output.

Music radio's ability to impress song popularity can be measured using the theory of agenda setting.

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CALL-IN MEDIA EXPOSURE AND STRENGTH OF CANDIDATE PREFERENCE: AN ANALYSIS OF THE 1992 NES PRE-/POST-ELECTION SURVEY

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CALL-IN MEDIA EXPOSURE AND STRENGTH OF CANDIDATE PREFERENCE: AN ANALYSIS OF THE 1992 NES PRE-/POST-ELECTION SURVEY

ABSTRACT

Using the 1992 NES Pre-/Post-Election survey, this paper explores the relationship between exposure to the "new media" (e.g. talk radio and call-in television) and strength of candidate preference. Of voters reporting exposure to call-in media, a majority state a strong preference for a candidate over a weak preference. Refuting the conventional wisdom that talk shows are mainly the province of White, working-class conservatives, the analysis shows middle-class minorities and liberals to report the highest levels of talk show use. Exposure to call-in media, as measured by the crude NES survey question, does not directly predict strength of candidate preference, however. To better get at the effects of the "new media," more sophisticated measures are called for. The paper also provides a demographic profile of call-in media users.

Introduction

Students of elections note that it is the innovations in political campaigns, whether related to the adaptation of a new technology or an innovative run by a third party candidate, that make elections worth our studying (Chaffee & Jamieson, 1994). "Predictable as the general election-year routine might be, each campaign brings surprises" (1994:261). Faced with a mainstream media environment that has become increasingly negative, antagonistic, self-important, and cynical in recent years (Dickson, Chapman, & Gershon, 1994; Patterson, 1993), candidates in 1992 sought alternative channels for communicating with voters (Lemert, 1994). The launching of Ross Perot's third-party candidacy, for instance, was built largely around televised call-in media appearances. In a study of the rise and fall of Perot's candidacy, Zaller and Hunt (1994) estimate that Perot persuaded roughly 20 percent of those watching him on morning interview programs to support his candidacy. Ridout (1993) attributes Bill Clinton's comeback in the weeks leading up to the Democratic National Convention to a flurry of appearances on nationally televised interview programs and talk shows--ten in one month's time.

Though initially associated with small audience cable systems, "new media" formats (including electronic town hall forums, political call-in television programs, presidential debates that feature audience questions, and morning variety and afternoon talk shows that invite candidates to address questions from a live studio audience) were quickly embraced by the networks. During the '92 election all of the major television networks adopted some variant of the political talk show or town hall format (Ridout, 1993). In addition to these institutional adaptations, the new media may have been influential in altering audience members *perceptions* of their political participation and knowledge (Bucy, 1995; Hollander, 1994). In a study using the 1992 pre-election North Carolina Poll, Hollander (1994) found that the greater the use of talk shows, even when controlling for demographic and political factors, the greater the perception of campaign knowledge.

Theoretically, call-in shows facilitated the introduction of a two-way communication model into presidential politics, enabling at least some voters to speak directly to candidates in a dynamic described by Newhagen (1994) as the "spontaneous interaction between political figures and citizens." This direct interaction between voters and elites through communication technology, a sort of political interactivity, underscores the prominence and evolving nature of media in electoral politics. Interactivity, or "the extent to which users can participate in modifying the form and content of a mediated environment in real time" (Steuer, 1995:46), is a focal concept of the new media. The two-way flow that interactivity implies suggests a new avenue of participation for voters and presents a new opportunity for candidates during elections.

For political actors, call-in formats hold appeal because they make relatively unfiltered communication possible with the electorate. For voters, call-in formats facilitate direct questioning of politicians. From both points of view, there is a relative lack of mediation and diminished role for the journalist. This lack of mediation is an important factor in distinguishing call-in programs from traditional campaign news or advertising (Newhagen, 1994; Zaller & Hunt, 1994). Although a relatively small number of voters directly interacted with candidates in these new media programs, an argument can be made that the few ordinary citizens who did get through helped to redefine the nature of political messages broadcast through the mass media. Callers who speak directly to candidates may serve as surrogates to members of the viewing audience; home television viewers may personally identify with the callers who get through to Larry King or see reflections of themselves in the typical electronic town hall forum participant.

Given the perception that the political system may now be more accessible and responsive through the mass media, a change in the reception of political messages may therefore be afoot; the challenge is to capture this change and measure what new impact, if any, interactive formats have on voters. The present study investigates an emerging area of candidate evaluation, namely, how voters' preferences toward presidential candidates are affected by exposure to the new media formats.

The Decline of Mediating Institutions

Patterson (1993) argues that the McGovern-Fraser reforms of 1970 favoring primaries over caucuses in nominating elections left a mediation vacuum between voters and the political system that gave the press a more prominent role in selecting candidates. The rise of direct-vote primaries thus diminished the influence of the political parties as mediating institutions between the political system and the electorate. From a more technological determinist perspective, Ranney (1983) maintains that the shift to television as the dominant medium of political communication may itself be a primary explanation for the decline in the salience of parties. Through professional norms and practices that value coverage of individuals rather than institutions, broadcast journalism is structured to inform voters more about prominent and charismatic political personalities than political parties (Chaffee, Zhao, & Leshner, 1994).

In the absence of strong party associations, communication variables assume a more prominent role in voter decisions (Chaffee & Choe, 1980). The large number of voters who eventually voted for Independent candidate Perot during the 1992 general election (19 million) provides at least anecdotal evidence that traditional party ties were relatively weak and, consequently, voters were open to other sources of direction and information about their campaign choices, namely, from the press. Patterson (1980) has dubbed this campaign process the "mass media election." In 1992, the rise of the new media began to erode even journalists' roles as mediators (Lemert, 1994).

From their analysis of the Perot campaign, Zaller and Hunt (1994) found the Texas billionaire was effective when he could appeal to voters in an essentially unmediated fashion, that is, with little or no journalistic interpretation between the message and the intended audience. Unmediated communication is defined by Zaller and Hunt as communication over which the source of a message retains control of (a) the timing of its release, (b) the amount released, and (c) the informational context in which it appears (1994:360). Besides call-in shows that allow for viewer questions and comment, other forms of unmediated political communication include paid political advertising that goes unchallenged either by the opposition or the news media, and direct mail (unless, of course, a direct mail piece becomes the object of a controversy and subsequent news coverage, is challenged and opened to reinterpretation).

Contesting the popular view that talk shows and call-in programs altered the course of electoral politics in 1992, Zaller and Hunt (1994) found little evidence that the new media became an important long-term factor in even Perot's campaign. Rather, they argue, "the larger and longer-lasting effects of the interview and call-in programs...was to signal the conventional press that Perot was a candidate who merited serious attention" (1994:363). Just as the tabloid press drove the Genifer Flowers philandering story onto the front pages of establishment newspapers, so call-in programs could be said to have surveillance and agenda-setting effects on the mainstream media, serving as an early warning system for up-and-coming news items and alerting the national press what *not* to ignore. The effect of call-in shows on the campaign, then, seems to have been indirect rather than direct.

Despite the modest direct effects of the new media on public opinion, Perot, as a third party candidate with no party apparatus in place before he started, rose to national prominence *largely because* of his radio and television interview and call-in appearances, including the 30-minute infomercials he aired on national TV to promote his economic proposals and campaign effort (Chaffee, Zhao, & Leshner, 1994). After sliding in the polls at the same time Perot was enjoying his ascent, Bill Clinton embraced the new media in earnest in June 1992, appearing on *Larry King Live* (twice), Arsenio Hall, MTV, morning variety shows, and two nationally televised town hall meetings. Whether due to these relatively unmediated programs or not, Clinton dramatically improved his poll ratings, moving from third place at the beginning of June to first place by the beginning of July

(Ridout, 1993). A few weeks after he won the presidency, Clinton said of the traditional press filter: "Anyone who lets himself be interpreted to the American people through these intermediaries alone is nuts" (Golson & Range, 1992).

Data and Methods

Social science has long had difficulty proving whether mass media has observable effects on the audience outside of controlled laboratory settings (Iyengar & Kinder, 1987). As Bartels notes, the scholarly literature on this subject has been much better at "refuting, qualifying, and circumscribing the thesis of media impact than at supporting it" (1993:267). Research more often than not concludes that mass media in general, and television news in particular, simply strengthen or reinforce existing beliefs and opinions (Kinder & Sears, 1985). Given the pervasiveness of the mass media and their virtual monopoly over election information, the inability to prove a causal connection between media messages and voter behavior is, according to Bartels, "one of the most notable embarrassments of modern social science" (1993:267). Indeed, with regard to political communication, Iyengar and Kinder argue that the lack of a (universal) theory of media effects significantly impedes our understanding of how democracy works (1987).

This paper does not promise to prove what decades of political communication research has not been able to accomplish; however, it does endeavor to lay some groundwork for future investigations into the newly emergent political call-in programs popularized during the last presidential election. As mentioned, the interactive nature of the new media is central to our understanding of it and should, consequently, figure prominently into our research approach. If media effects are difficult to discern from a simple one-way model of communication (with a unidirectional information flow), then perhaps the added element of two-way interactive communication intrinsic to call-in formats may produce different results.

Although still few in number, studies that look at the relationship between new media programs and voters have tended to focus on call-in media use and political knowledge, a traditional dependent variable. Looking at data from two pre-election statewide surveys, one from California, the other from North Carolina, Chaffee, Zhao, and Leshner (1994) found that talk shows did, in fact, add to the public's knowledge about candidates and their issue positions. Hollander (1994) analyzed the same North Carolina survey data and compared it to the combined 1992 National Election Study (NES) Pre-/Post-Election Survey. In the NES data, call-in show exposure is weakly but positively associated with knowledge about the candidates and their parties. Call-in exposure surfaces as a slightly stronger predictor of knowledge in the North Carolina data (Hollander, 1994).

From the national data, Hollander also finds that call-in exposure leads to greater campaign knowledge among the less educated, but provides no additional knowledge for more educated respondents. Talk show exposure does not influence such perceptions among more educated respondents, perhaps because their exposure to televised political information is offset by the in-depth analyses available in the print media, which more literate voters would be apt to use.

Missing from most studies of call-in media written thus far is an examination of the impact of call-in media exposure on candidate preference. This paper uses the above 1992 NES Pre-/Post-Election Survey conducted by the Inter-university Consortium for Political and Social Research at the University of Michigan to explore the relationship between call-in exposure and strength of candidate preference. Both call-in exposure and strength of candidate preference are simple dichotomous, or nominal, variables (yes-no; strong-not strong). This weakness in survey design necessarily limits the analysis by providing a narrow range of potential answers and constraining the explanatory power of the variables. Moreover, the call-in question measures respondents' *exposure* to call-in media rather than *attention*, which is seen as a stronger, more reliable predictor of media effects (Chaffee & Schleuder, 1986; Geiger & Newhagen, 1993; McLeod & McDonald, 1985).

The call-in question asks: Do you listen to or watch talk shows on radio or TV where people call in to voice their opinions? (yes, no) The candidate preference question queries:

How strong is your preference for the presidential candidate you will vote for? (strong, not strong)

While the call-in question is not specific to a particular medium (either television or radio) or in the precise program, these problems are also found in questions measuring general television and newspaper exposure and attention (Hollander, 1994). And, despite the limitations of questions that translate into nominal variables, their analysis can still serve as a starting point for investigating potential talk show effects. Based on the above, it can be predicted that:

H_1 Of those exposed to call-in media, more will report a strong preference for their presidential candidate of choice than a weak preference; call-in users will be more likely to vote for their candidate than non-users.

Race has been found to predict certain political behaviors and orientations. For instance, Shingles (1981) found that working-class Blacks attend campaign rallies and display lawn signs and bumper stickers more than working-class Whites. A 1992 election study of the African-American enclave of Prince George's County, Maryland by Newhagen (1994) found that Blacks reported using call-in shows more than Whites. Newhagen (1994) also found, as did Zerbinos (1993), talk show media users to be more likely to vote, to be issue-oriented, and to undertake a number of other political behaviors. Newhagen's Prince George's County study found self-efficacy and race to be particularly strong indicators of call-in use. Social class, a traditionally strong indicator of news media use (Robinson, 1975), did not do well as a predictor of call-in use in the Prince George's County study, nor did ideology, political (system) efficacy, or leader trust.

Taking race into consideration with call-in media exposure, it can be predicted that:

H_2 Minorities will report greater exposure to call-in media programs than Whites, regardless of class.

Talk shows, and talk radio in particular, are generally considered to be conservative in orientation (Times Mirror Center, 1993). As such, they may attract an ideologically conservative audience. Political commentator Fred Barnes (1994) recently advanced a connection between talk radio and working-class conservatives (white males):

> One of the things that I think is not to be underestimated in this past [1994] campaign and as an ongoing phenomenon in reaching this particular group of people, is talk radio, and particularly people like Rush Limbaugh and others, who I think have a tremendous impact on that group of people. These are people who drive trucks, they're out in their cars and trucks, they're working. They listen to these shows on television, these talk radio [sic] shows that tend to be more conservative than not, and they're affected by them. And some people like Rush Limbaugh see their role as an educating role, one where he will read some article that is on the editorial page of the *Wall Street Journal* to people who would otherwise not be reading that page.

Given Barnes' anecdotal observations about talk shows and periodic pieces in the popular press suggesting talk shows are a conservative phenomenon (e.g. Corliss, 1995; Fineman, 1993; Kolbert, 1993; Lind, 1995; Tueque, 1993;), it can be predicted that:

H_3 Conservative respondents will report higher levels of call-in media exposure than liberal respondents; working-class conservatives will report the highest levels of call-in exposure.

Perot's association with the call-in format gives rise to a final hypothesis. Given the Independent candidate's reliance on unmediated communication channels and programs to reach his constituency, it can be predicted that:

H_4 Perot supporters will report higher levels of call-in media exposure and they will report higher levels of strong preferences than Clinton or Bush supporters.

Results

A frequency run of the bivariate call-in question showed more respondents reporting exposure to call-in media (yes, n=1,264 or 50.8 percent) than reported not seeing or listening to such programs (no, n=1,044 or 42.0 percent). One hundred seventy seven respondents (7.1 percent) did not answer the question and were removed from further analysis. A smaller number responded to the strength of candidate preference question than did the call-in item (1,813 compared to 2,308). Of these, more reported a strong preference (1,249 or 50.3 percent) than a preference that was not strong (564 or 22.7 percent). That 672 respondents, or 27 percent of the total survey population, did not answer the preference question perhaps reveals the limitation of a simple strong/not strong question design more than their own lack of an opinion.

A crosstab analysis of media habits, demographic traits, and political characteristics from the combined 1992 NES Pre-/Post-Election Survey data shown in Table 1 shows that those exposed to call-in media are heavy television viewers (70.6 percent, $p<.001$) and newspaper readers (51.1 percent, $p<.05$) but only light-to-moderate radio listeners ($p<.01$). The call-in audience perhaps associates the new media more with political call-in television than radio talk shows. Half of all call-in viewers report having at least some college education while the other half report a high school education--or less. Eighty-two percent of the call-in audience was white ($p<.001$); 18 percent minority (a combined category of Blacks, American Indians, and Asians, $p<.001$).

Career-wise, more call-in viewers are employed (61.4 percent, $p<.05$) than are out of work or going to school (38.6 percent, $p<.05$). While they tend to have jobs, members of the call-in audience are neither educationally nor financially "rich." It is the lower-to-middle rungs of the socioeconomic ladder, those whose real wages have been in slow decline in recent years (Phillips, 1990), who are the most avid call-in media users. Only 10.5 percent of the call-in audience reported having done some graduate study and 16.2 percent reported a combined family income of $60,000 or over (although income was not statistically significant).

Politically, a roughly equal number of call-in viewers described themselves as Democrats, 38 percent, as Republicans, 37 percent, while a fewer number, 25 percent, identify themselves as Independent ($p<.05$).

A Statistical Profile of Call-In Media Users[1]
(respondents reporting "yes" to the exposure question; n=1,264)

Table 1

Media Habits	*Light Users*	*Moderate Users*	*Heavy Users*	
Radio	44.1%**	33.3%**	22.6%**	
Newspapers	32.4%*	16.6%*	51.1%*	
Television	12.2%***	17.2%***	70.6%***	
Demographic Traits		*Male*	*Female*	
Gender		46.8%	53.2%	
	Total	*Male*	*Female*	
Average Age	46.2	44.4	47.8	
		White	*Minority*	
Race		82.0%***	18.0%***	
	White M	*Minority M*	*White F*	*Minority F*
Race by Gender	84.0%*	16.0%*	80.4%***	19.6%***
	K-12	*College*	*Graduate Study*	
Education	50.0%*	39.5%*	10.5%*	
		Employed	*Unemployed*	
Job Status		61.4%*	38.6%*	
	$0-$25k	*$25k-$60k*	*$60k and over*	
Income Level	44.1%	39.7%	16.2%	
Political Variables	*Clinton*	*Bush*	*Perot*	
Candidate	53.9%†	36.8%†	9.3%†	
	Liberal	*Moderate*	*Conservative*	
Ideology	26.9%	32.2%	41.0%	
	Democrat	*Independent*	*Republican*	
Party ID	38.0%*	24.9%*	37.0%*	
		Strong	*Not Strong*	
Preference		70.3%*	29.7%*	
		Yes	*No*	
Perot Ever 1st Choice?		22.8%†	77.2%†	

†p<.10 *p<.05 **p<.01 ***p<.001

Though not significant for call-in exposure, the income variable was significant in a crosstab of strength of candidate preference by income. In the crosstab, a greater percentage of lower and middle-income respondents reported a strong preference for a candidate than upper income voters ($p<.001$). With more money and leisure time to spend thinking about politics (and potentially with more need, as they may have financial interests at stake), upper income voters have more opportunity and motivation to follow the election and develop a political schema for sorting out the barrage of conflicting information that inundates the public sphere during a campaign. This political interest may then result in the development of more sophisticated cognitions that enable them to distinguish between the different shades of gray in political messages. Hence, their preferences are less pronounced because they are able to see the good *and* bad in each candidate.

Strength of preference demonstrated an inverse relationship to education in another crosstab, however: the less education the stronger the candidate preference, and the more education the weaker the candidate preference ($p<.001$). Frequently, education is used as a proxy for political sophistication (Sniderman, Brody, & Tetlock, 1991). From this, we can expect lower education voters neither to have the requisite interest in politics (made possible by leisure time and motivation) nor the cognitive tools necessary to develop a highly elaborated political schema, or framework for organizing their political beliefs. As research in political cognition has shown, college educated people place more emphasis on performance criteria, while the less well-educated tend to base their inferences on the observable attributes of candidates (Miller, Wattenberg, & Malanchuk, 1986). They consequently will tend to view candidates in superficial terms. In short, their political cognitions will resemble those of low income voters.

A crosstab using strength of preference by call-in exposure yielded a significant association and provided support for Hypothesis 1. Of those who reported exposure to call-in media, a higher percentage stated a strong preference for a candidate than a weak preference, 70.3 percent compared to 29.7 percent (p<.05). However, the results for those who did *not* report using call-in media were similar, though slightly less pronounced; 65.5 percent held strong preferences compared to 34.5 percent who did not (p<.05). While this finding supports the first hypothesis, it is important to test whether it still holds true after other forms of media use, as well as important demographic and political factors, are taken into consideration.

Next, a crosstab using call-in media exposure by race was run, revealing significant results that showed minorities to have higher levels of reported call-in media exposure than Whites. Overall, 65.1 percent of minorities reported call-in exposure compared to 52.9 percent for Whites (p<.001). This finding supports the first part of Hypothesis 2 and corroborates Newhagen's (1994) finding that race can be a predictor of call-in use. The same crosstab of call-in exposure by race, this time controlling for income, showed minorities reporting higher levels of call-in exposure than Whites across all income levels (p<.05, except for upper income), supporting the second part of the hypothesis, which said that minorities will report greater exposure to call-ins than Whites regardless of class.

Call-In Exposure by Race
(controlling for income level)

Table 2

Hypothesis 2

	Income		
Race	Lower (n=520)	Middle (n=468)	Upper (n=192)
White	55.3%*	52.8%***	53.2%
Minority	65.4 %*	71.7%***	58.1%

*p<.05 **p<.01 ***p<.001

Hypothesis 3 is addressed to the question of whether talk shows are primarily a conservative, working-class phenomenon. A crosstab of call-in exposure by ideology shows that slightly more self-described liberals than conservatives (a combined category that includes moderates and conservatives) report watching or listening to call-in media, although not at statistically significant levels. The same crosstab, this time controlling for income, reveals a similar pattern and runs contrary to conventional wisdom. At the lower- to middle-income levels, liberals report slightly *more* call-in exposure than conservatives (the results approach significance at the $p<.10$ level). Call-in use becomes the domain of conservatives only in the upper-income range ($60,000+), which is rarely mentioned as the natural audience of talk shows. These findings fail to support Hypothesis 3, which said that conservatives will report higher levels of call-in media exposure than liberals, and that working-class conservatives will report the highest levels of call-in exposure.

Call-In Exposure by Ideology
(controlling for income level)

Table 3

Hypothesis 3

	Income		
Ideology	Lower (n=523)	Middle (n=470)	Upper (n=192)
Liberal	63.4%†	56.3%	43.4%*
Conservative	56.1 %†	54.3%	56.4%*

†p<.10 *p<.05 **p<.01 ***p<.001

The first part of Hypothesis 4, that Perot supporters will report higher levels of call-in exposure than Clinton or Bush supporters, was born out by two crosstabs. The first question asked if Perot was ever your first choice for president and the second asked who voters would be voting for in the presidential election. The results of both crosstabs, using call-in as the dependent variable, approached significance ($p<.10$). In the first instance, 58.2 percent of Perot-as-first-choice voters reported call-in exposure, while 41.8 percent did not. In the second crosstab, Perot voters reported the highest amounts of call-in viewing of any other candidate following: 66.2 percent for Perot compared to 56.3 percent for Clinton and 56.4 percent for Bush supporters respectively. Only a third of Perot voters said they had *not* watched or listened to any call-ins. The second part of the research question, that Perot supporters would report stronger preferences than Clinton or Bush supporters, was also born out by a second set of crosstabs using strength of preference as the dependent variable. A higher percentage of Perot supporters, 75.9 percent, reported a strong preference than Clinton, 71.8 percent, or Bush, 62.9 percent, supporters (p<.001).

Table 4 presents the bivariate relationships (correlation coefficients) for strength of preference and call-in exposure and a series of demographic, political, and media variables. For strength of candidate preference, education level emerges as the strongest correlate (.12, p<.001) in the data. Radio use (.11, p<.01) and income (.09, p<.001) are the next most associated with a strong candidate preference, while call-in exposure emerges with a very slight association (.05, p<.05). The variable, "Was Perot ever your first choice for President," shows the strongest negative correlation to strength of candidate preference (-.15, p<.001), followed by party identification (-.13, p<.001) and television use (-.10, p<.001). From this we can infer that voters with strong preferences were less inclined to be Perot supporters, television viewers, or diehard party faithful.

For call-in exposure, radio use shows the strongest association (.12, p<.001), suggesting that *some* media use leads to *more* media use and supporting the intuitive supposition that radio listeners are bound to regularly encounter at least some talk radio programs. Interestingly, television use has the strongest negative correlation to call-in exposure (-.22, p<.001). This counter-intuitive finding suggests that the more people watch television, the less they will be exposed to call-in programs. Perhaps this latter contradictory finding is an artifact of a self-reporting measure. Television viewers may equate call-in programs with talk radio and not *televised* political call-ins such as *Larry King Live* or the electronic town hall forums popularized during the 1992 campaign, so

Correlation of Strength of Preference and Call-In Exposure
with Demographic, Political, and Media Variables

Table 4

Variable	Strength of Preference	Call-In Exposure
Age	-.09***	-.01
Education	.12***	.01
Employment	-.07**	-.05*
Income	.09***	.02
Race	-.01	-.06**
Gender	.00	.00
Candidate	-.08***	-.04
Ideology	.02	-.01
Party	-.13***	-.04
Perot	-.15***	.04
Newspaper	.01	-.05*
Radio	.11**	.12***
Television	-.10***	-.22***
Call-In	.05*	(Preference) .05*

*p<.05 **p<.01 ***p<.001

they may not report being exposed to them when asked in a survey. Newspaper use and race were also both negatively correlated to call-in exposure, but only slightly.

Since strength of preference is a dichotomous, nominal variable, logistic regression was used to further assess the relationship between the variables and the respondent's report of strength of preference. Table 5 shows the variables Perot as 1st Choice and Republican party membership to have the largest regression coefficients relative to standard error. The negative sign on Perot as 1st Choice (-.68, p<.001) indicates that respondents who are *not* Perot supporters are more likely to have strong preferences than those for whom Perot was ever their first choice for president. While the crosstabs supporting the first part of Hypothesis 4 showed substantial call-in use by Perot supporters, this new media exposure does not necessarily translate into a strong preference. The call-in variable shows a small regression coefficient relative to standard error and it is not statistically significant.

Compared to Democrats (the regression reference category for the political party variable), Republicans are more likely to have a strong preference for a candidate (.47, p<.001). For Independents, the opposite holds true (although at a level only approaching significance); the odds are they will have a decreased chance of a strong preference compared to Democrats (-.21, p<,10). As is increasingly the case, political belief systems may be organized around factors *other* than party affiliation and ideology and may be reconstituted with each election based on the unique mix of candidates, issues, and context specific to the campaign (Kennamer, 1987). People for whom party identification does not operate as a primary filter and cognitive organizer may be more receptive to alternate information sources, including news reports, debates, and political advertising (Chaffee, 1981). Following this logic, one might expect Independents to be more media reliant for their candidate impression formations.

The main findings from this logistic regression showing Perot supporters and Independents to *not* have strong candidate preferences possibly derives from the negative tenor of much media coverage, especially toward Perot (Patterson, 1993; Zaller & Hunt, 1995). What Zaller and Hunt term the "bust" phase of Perot's popularity cycle was more pronounced than for that of the other candidates (1995). Both the sheer amount of Perot's negative coverage, and the amount of it relative to positive coverage, were greater than for comparable former candidates Jimmy Carter and Gary Hart (Zaller & Hunt, 1995). Exposed to coverage that was largely antagonistic toward Perot, Independents were understandably lukewarm partisans.[2]

Logistic Regression of Demographic, Political, and Media Variables Against Strength of Preference[3]

Table 5

	Variable	Regression Coefficient	S.E.	Coefficient/S.E.
(n=1,670)				
	Age	-.09*	.04	-2.25
	Employment	-.15	.14	-1.07
	Income			
	$0-$24,999	-.19*	.08	-2.38
	$25,000-$59,999	-.04	.07	-0.57
	Race	-.18	.16	-1.13
	Gender	-.10	.13	-0.77
(n=1,563)				
	Candidate	.34*	.15	2.27
	Ideology	-.33*	.15	-2.20
	Perot 1st Choice	-.68***	.13	5.23
	Party			
	Independent	-.21†	.11	-1.91
	Republican	.47***	.08	5.88
	Education			
	Elementary	-.56**	.20	-2.80
	High School	-.11	.10	-1.10
	Some College	.15	.11	1.36
	College Degree	.11	.13	0.85
(n=603)				
	Call-In	-.10	.20	-0.50
	Radio	-.50**	.18	-2.78
	Newspaper			
	None	-.06	.19	-0.32
	1 Day	-.48†	.25	-1.92
	2 or More Days	.51**	.18	2.83
	Television			
	1-2 Days	.11	,17	0.65
	3-4 Days	-.04	.17	-0.24

†p<.10 *p<.05 **p<.01 ***p<.001

Discussion and Conclusion

From this analysis we see that call-in media exposure is nominally correlated with a strong preference for a candidate but recedes from view when other variables are included in a regression model. Politically, the talk show or call-in audience is made up of a roughly equal number of Democrats and Republicans and a fewer number of Independents. Call-in users are not uneducated; half of all respondents who reported yes to the call-in question had at least some college education. Interestingly, minorities report higher levels of call-in exposure than Whites, with middle income minorities reporting the highest levels. Consistent with other findings (e.g. Newhagen, 1994), a conservative ideological orientation does not explain call-in use; slightly more liberals report talk show exposure than conservatives. In general, talk shows do not appear to be a conservative, working-class, white male phenomenon, despite the conventional wisdom (and occasional scholarly assertions, e.g. Pan & Kosicki, 1995).

Additionally, it is increasingly evident that call-in media, which occupied a unique place in the presidential campaign of 1992, are becoming a regular feature of the national political landscape. Call-in exposure (especially as measured by the crude NES question item) did not directly predict strength of candidate preference; however, as a salient media genre during the 1992 election, talk shows may have contributed at different times to both Bill Clinton's and Ross Perot's rise in the polls. In the case of Perot, call-ins appear to have contributed substantially to his initial rush of support--his burst onto the national scene (Zaller & Hunt, 1994). This radar blip then prompted the conventional media to give Perot's campaign more attention and closer scrutiny.

> Perot won the first small increment of his support through largely unmediated communication. The press, impressed by this evidence of his mass appeal, judged Perot to be a credible candidate for president and hence worthy of sustained coverage, which it promptly began to provide. In so doing, the press effectively interposed itself between Perot and the mass audience. This coverage greatly extended the reach of Perot's message, but it also had its downside. Thereafter, the flow of positive and negative news about Perot in the conventional press, as determined by reporters' rules of coverage, would determine the fate of Perot's candidacy (Zaller & Hunt, 1994:386).

Just as conventional media emerged as an important long-term factor in Perot's continued support, so may another intervening variable (or host of intervening variables) determine the relationship between call-in exposure and strength of candidate preference. As this study and a great body of other research has found, political party plays an important role in candidate preferences. Indeed, several classic studies have found political party (and ideology) to be so predictive of voter preference in general elections that a definitive test of other influences is rendered difficult, if not untenable (Berelson, Lazarsfeld, & McPhee, 1954; Burnham, 1970; Campbell, Converse, Miller, & Stokes, 1966). Issues such as the economy, taxes, and defense, which this paper did not consider, may also determine candidate choices.

Nevertheless, call-in media do generate some observable direct effects. Perhaps the most obvious of these is their ability to elicit direct feedback from the audience in such forms as the billions of dollars in annual purchases (and thousands of yearly on-air phone calls) to the Home Shopping Channel or the millions of dollars in pledges to public radio and television stations during their fundraising telethons. During the campaign of 1992 these "effects" were most evident in the volume of phone calls and offers of volunteer and financial support to the innovative campaigns of both Ross Perot and Democratic primary candidate Jerry Brown, who pioneered the use of the direct political appeal on both mainstream (network) and cable broadcast media.[4] If the effects of unmediated political communication on the audience are ever to be better isolated, more sophisticated measures of call-in activity, exposure, and attention will need to be developed.[5]

Endnotes

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[1] The total n for those answering "yes" to the call-in exposure question is 1,264, but not all call-in viewers answered every question so the n varies in crosstab comparisons. Precise variable definitions are available from the author.

[2] This finding conflicts with the earlier reported crosstab showing a higher percentage of Perot supporters reporting a stronger preference than Clinton or Bush supporters. However, a separate crosstab of strength of preference by political party showed more Democrats with strong preferences than either Independents or Republicans ($p<.001$). Additionally, a crosstab of strength of preference by Perot as 1st Choice indicated that respondents who did *not* consider Perot their first choice were more likely to have strong preferences, 72 percent, than those who did, 55 percent ($p<.001$).

[3] Variables were entered in three separate regressions to preserve maximum number of cases due to missing data. Categorical variables were converted into a group of n-1 variables, using the SPSS default deviation contrasts subcommand, which uses the last category (typically the highest level of any given variable) as the reference category. The value of the coefficient for the reference category can be calculated by taking the negative of the sum of the other category coefficients. Logistic regression coefficients are interpreted as a ratio of the coefficient to the standard error; the larger the coefficient relative to standard effort, the more likely are the *odds* of an event occurring.

[4] Brown ultimately raised $6.5 million in pledges of $100 or less and received 180,000 calls to his initially derided then widely imitated 800 number (Brown for President campaign press release, July 1992). The author served as Brown's national scheduler and deputy press secretary during the '92 primaries.

[5] Unlike the NES survey, a *New York Times*-CBS poll cited in Zaller and Hunt (1994) framed call-in use as a continuous variable rather than in yes-no nominal terms, yielding richer data.

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SCHEMATIC FRAMES AND READER LEARNING:

THE EFFECT OF HEADLINES

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ABSTRACT

SCHEMATIC FRAMES AND READER LEARNING: THE EFFECT OF HEADLINES

Newspaper headlines are conceptualized as being pre-texts that help readers process a news story. Theory suggests that headlines work by cueing readers who use the information to organize material in the news story and integrate the material into their long-term memories. Results from a controlled experiment using student subjects supported the main hypothesis: headlines helped readers recall information from a series of news stories. Analysis of reader protocals provided evidence that headlines helped readers organize information and integrate it with prior information in their memories.

SCHEMATIC FRAMES AND READER LEARNING: THE EFFECT OF HEADLINES

Although numerous studies have profiled newspaper readers and their uses of newspapers (Stone, 1987), fewer studies have looked at how readers cognitively respond to various elements of the news package (Bell, 1991). One part of the newspaper package that has been under-researched is the effect of headlines on readers' processing of the news (Hilliard, 1991).

Typically, discussions of headlines conceptualize them as serving basic functions of allowing the reader to easily scan a page for news and attracting the reader to a story (Baskette, Sissor, & Brooks, 1986). The purpose of this present study is to conceptualize news headlines in a different way: as texts that prepare readers for processing information in the story, pre-texts that may help the reader understand the news. The principal question for this study looks at how headlines affect reader processing of news stories.

In light of recent attempts by the industry to develop an electronic newspaper (Christopher, 1994; Morton, 1993), headlines may be even more important than they are for a traditional newspaper. To make it easier for readers to enter the newspaper, section fronts of the electronic newspaper are being designed so that they feature headlines and summary paragraphs (Christopher, 1994). Under this design, a reader would then have an option to select the complete story. Headlines will act as electronic gates for the reader of the future, and this study tries to explain how those gates will work.

LITERATURE REVIEW

The consensus of reading research is that any device that prepares readers for new material will increase the probability that the readers will be able to later produce the new information (Kulhavy, Schwartz, & Peterson, 1986). The question is untested and open, however, whether headlines function as prereadings that would prepare the typical newspaper reader and affect comprehension.

For this study, headlines are conceptualized as being a form of pre-reading, or an advance organizer (AO). Ausubel (1960) conceptualized AOs as pre-reading events that appear to help readers use background information they already hold. These organizers bridge the gap between what the reader already knows and what the reader needs to know. Information in the AO becomes an anchoring post or scaffolding for ideas that will come later (Ausubel, 1963). A series of studies by Mayer (1989, 1987, 1984, 1983, 1980, 1979) support Ausubel's theory and expand the concept of advance organizers to concrete material such as graphic devices. It may be possible that, besides attracting reader attention to stories, headlines may be bridges, text organizers that help readers process the news.

Research on Headlines. Research on the effects of newspaper headlines has been mixed, and there have been only a few studies. In 1953, Tannebaum complained that almost no research had investigated the psychological effects of headlines. In 1963, other researchers (MacLean, & Kao) noted that although the effects of page design and headline typeface had been subjects of extensive research, the effects of headline content on newspaper readers had undergone little analysis. In 1991, Hilliard found that little had changed since 1963: the psychological effects of newspaper headlines remained an unknown factor.

Yet, the overall evidence suggests that headlines do play an important role in readers' information processing. For example, headlines can affect attitudes. Headlines that emphasized "bad war news" during World War II were more effective in instigating a positive attitude toward participation in the war effort (Allport & Lepkin, 1943) than were headlines with positive news. One early study (Deutschmann, 1956) found that headlines serve as cues for readers as they seek interesting stories. Headlines attract attention or guide selection, but they also influence decoding of the message, according to Tannebaum (1955), who reported in 1953 that the positive or negative slant of headlines affected how readers judged the guilt or innocence of an accused criminal in a news story.

In a similar experiment measuring how readers respond to headlines that contain innuendo about a person, a sociology study (Wegner, Wenzlaff, Kerker, & Beattie, 1981) found that subjects rated the protagonist more positively when the headline was neutral, while they rated the person in a negative way when the headline contained innuendo or incrimination. But a study by Leventhal and Gray (1991) found that innuendos in headlines had no effect on memory or attitudes toward a crime victim, the accused, or the criminal's sentencing. But, it appears that the sensational story topics--rape and abuse--may have skewed the memory tests.

Contrary to Leventhal and Gray (1991), Pasternack (1987) found that libelous statements in a headline and story led people to judge a man more likely to be a thief. In comparing the effects of libel in the story or in the headline, Pasternack found that the libelous headline showed a greater effect in increasing judgments of guilt. In discussing his results, Pasternack (1987) made an important point: In the real world, headlines may be even more important than text because readers often will look only at a headline, skipping the story or skimming it. Such superficial attention to the headline is likely to increase the effect of the headline.

In investigating the negative effects of ethnic references in crime reporting, Winkel (1990) found evidence that after reading a series of 40 headlines, subjects were more likely to overestimate the number of crimes committed by an ethnic group other than the one to which the subject belonged. Winkel (1990) suggested that headline readers used information in headlines to make generalizations about behavior of ethnic group members, forming stereotypical judgments about a group of people based on the negative characteristic emphasized in the headline.

Headlines are so powerful that the topic of the summary has a greater affect than the slant in forming readers' attitudes toward a candidate (Geer, & Kahn, 1993). Geer and Kahn suggested that this "surprising" amount of influence may be due to readers' attitudes being primed by certain topics. Headlines, they said, may guide readers' choosing certain information to encode. Thus, headlines affect what people learn.

Overall, research on newspaper headlines supports the idea that headlines have an effect on readers. Winship and Allport (1943) appeared to be right when they argued that newspaper headlines create images in the minds of readers and these images have important psychological effects on readers.

Process of Reading a Headline. To study how readers process headlines, Perfetti, Beverly, Bell, Rodgers, and Faux (1987) completed six experiments to test whether textual space constraints imposed on headlines affected the comprehension process. The researchers noted that the Spartan approach to headline content--the omission of verbs and articles in headlines--created syntax that challenged a reader to interpret the meaning. They hypothesized that instead of parsing headlines as if a headline were a sentence, a reader would heavily favor problem-solving techniques while processing a headline.

By using a series of ambiguous headlines, the researchers (Perfetti et al., 1987) found that subjects parsed headlines in the same way that they comprehend other written language. Overall, headline comprehension was very difficult, and yet readers could not overcome their reading habits to use shortcuts or other knowledge even when those other strategies would have been an advantage. Ambiguous headlines took longer to read not because there were multiple meanings to choose from but because it took longer to achieve any meaning. Readers looked at syntactic structure first rather than semantic plausibility.

In one of their experiments (Perfetti et al, 1987), the researchers found that time to read a sentence was longer when preceded by an ambiguous headline than an unambiguous headline. The researchers suggested that a reprocessing effect--readers had to reread the sentence because it did not meet the expectations influenced by the headline--accounts for the longer processing time. This finding suggests that headlines can affect the processing time for reading a news story, and that there is a strong link between a headline and the material that follows.

Schematic Framing. Underlying the theoretical work of Mayer and Ausubel in promoting advance organizers as learning devices is the need to explain how organizers work. Ausubel (1963) tied his ideas of cognitive functions to Bartlett's ideas (1932) that "schema," a mental frame based on prior knowledge, was an organizing structure. Geer and Kahn (1993), too, use the broad idea of schema theory to explain the priming result that they found

The positive effects of various text features on reader comprehension have been explained through schema theory (e.g., Beck et al, 1991). Dole, Valencia, Greer, and Wardrop (1991, p. 144) have declared that the effect of schema theory on understanding reading comprehension "has been nothing short of revolutionary." Schema, according to various scholars, suggests that what a reader stores in memory is determined by a type of encoding process that is similar to a knowledge frame (Alba & Hasher, 1983). This frame selects or even alters a person's experience so that the representation of the experience that is stored makes sense and is consistent with other experiences. Schema activates a reader's prior knowledge, which aids interpretation of new information (Alba & Hasher, 1983). Generally, schema refers to the general knowledge that a person holds about a subject matter, event, or experience. In general, schema theories hypothesize that prior knowledge that is related to new experiences helps improve acquisition, retention, and retrieval of new information (Alba & Hasher, 1983).

Biocca (1991) has proposed a theory of schematic frames for the processing of television, based on the idea that viewers construct mental models of information. To understand memory and processing, Biocca outlined a framework for studying viewers' representations of media messages. Although he applied his work directly to television commercials for political candidates, the idea of semantic frames should apply to the mental models readers construct as they engage a text.

A reader forms a mental model of the meaning of a news story based on the model presented by the editor who wrote the headline, on the model created by the writer of the story, on the abilities and knowledge of the reader, and on the mental states of the reader as the reading goes on. While the words on the page may be static and fixed, the meaning in the mind of the reader constantly changes (Biocca, 1991).

Mental models are useful in thinking about the ways that readers build models of language (McNamara, Miller, & Bransford, 1991). According to theories (Johnson-Laird, 1983, van Dijk & Kintsch, 1983), readers process text at least two ways: at the propositional level (propositions contain at least one noun and predicate; they are the smallest unit of knowledge that can stand as a separate assertion); and by constructing mental models that are "analogous in structure to the events, situations, or layouts described in the text" (McNamara et al., 1991, p. 493). Mental models do not retain verbatim text structures, but they can help recall of events, relevant places, prominent characters, or objects associated with main characters (McNamara et al., 1991).

Biocca's approach was to develop a theoretical model that specifies "the high-level semantic `programs' that appear to be operative in the processing" of the media message (Biocca, 1991, p.41). He proposed that a selection of cognitive procedures, or schematic frames, were active in generating the mental models. These frames access a person's schemata. "They are frames because each extracts and arranges specific information from the semantic frames of the message. Schematic frames are cognitive processes that organize application of the viewer's schemata to the semantic frames (codes) of the . . . message" (Biocca, 1991, p. 41).

The frames, which represent psychological operations, were based on research and theory associated with psycholinguistics, discourse processing, and persuasion research (Biocca, 1991). Some of their properties are that the various frames work at the same time while working out the meaning from the words. What happens in one frame may influence what happens in another frame. Biocca (1991, p. 42) called working out meaning the act of "calculating semantic values from the codes." The semantic values in the various frames change repeatedly as a message is processed. The frames proposed (Biocca, 1991) included: 1) Discoursive frames, 2) "Possible world" frames, 3) Actant or agent frames, 4) Point of view frames, 5) Narrative frames, 6) Ideological frames, and 7) Self-schematic frames.

After reading a headline, a person should have filled in these various frames, which begin to alter and change as the reader engages a text. These frames appear to be similar to the mental structures that Ausubel (1963) described as influencing meaningful learning. Despite the numerous studies of advance organizers, little effort has been made to describe the structures created by AOs. Biocca's theory (1991) provides a way for understanding the function of pretext. AOs, by providing a schematic frame for a text, may help the reader make inferences about situations, people, and objects that appear in a text.

THEORY

This present study concerns itself with one basic theoretical question: How do pretext messages--in this case, headlines--interact with a text to increase understanding?

Numerous studies show that students learn more from text plus illustrations than from text alone (Mayer, 1989). In developing a theory for headlines, it is useful to note that headlines are similar to illustrations. In fact, Waller (1979) developed the concept of "access structures" to describe the spatial and typographic cues that helped readers access and read text. Those structures include illustrations, headlines, summaries, boxed materials, and even different typographic settings. Headlines appear to be a specific case of a general example of message processing.

Integration of Theories. The goal of this present study is to apply Ausubel's (1963) theory of advance organizers to newspaper headlines. If headlines are AOs, they should produce evidence of meaningful learning. Ausubel (1963) stated that meaningful learning occurs when new ideas are integrated with existing cognitive structures. Advance organizers help bring about that integration, according to Ausubel (1963). An AO brings to the surface those concepts already held in a reader's mind, familiar concepts that will help the reader understand the new material to be read (Ausubel, 1963). If the reader's cognitive structure does not hold the concepts that are relevant to learning the new material, the AO provides the needed concepts. The AO is an anchor, a scaffold, a framework for the reader. Thus, a headline, if it is an AO, introduces material to be learned, and it prepares the reader for understanding the text that will follow.

Modeling the theory. Figure 1 illustrates the various conditions that influence the effectiveness of headlines in helping a reader to learn from a news story. Information from the headline organizes the material from the text in working memory and integrates the new material with prior knowledge held in long-term memory. This process of organization and integration occurs repeatedly and often along with repeated connections with long-term memory, where a reader's schematic frame shifts and changes as the reader comprehends the text (Mayer, 1989).

Insert Figure 1 about here

The frames become embedded in other frames or include other frames as new material is processed. Successful organization and integration leads to increased learning because the new material is accessible and memorable for the reader (Mayer, 1989). Of course, the effects of the headlines and text also are mediated by the characteristics and states of the reader.

A headline by virtue of its typographic prominence and placement above a story provides strong cues for cognitive processes and monitors processes of reading and comprehension (van Dijk, 1986). An effective headline provides a way of organizing the concepts that are being learned. Organization occurs in short-term memory, where material is made available from the senses to be integrated with prior knowledge held in long-term memory. Without organization of the new material, the reader's learning is haphazard and inefficient (Mayer, 1989). The effective headline helps the reader integrate concepts from the news story. This implies that a schematic model formed after reading the headline is based on the connections between the information in short-term memory and prior knowledge. The assumption is that the headline provides the reader with material for building a schematic model that is relevant to the text.

Headlines, even when they are written in Spartan language, have clear effects on newspaper readers. They can affect text organization and integration. By affecting mental processes, they can influence learning, attitudes, and inferences such as judgments of guilt. Although they may not meet the classical definition of an advance organizer (Ausubel, 1978, 1963), headlines may provide a frame that aids readers.

The present study uses repeated measures and random assignment to control for environmental and individual differences and to focus on the effects of headlines. Further, the design will call for control of various message variables known to influence learning--length, topic, order--and for control of prior knowledge that individuals bring to the experiments. Theory leads to the following hypotheses:

H1) Subjects will recall significantly more information from a news story with a headline than from one without a headline.

If newspaper headlines function as advance organizers, they should produce evidence of meaningful learning. Ausubel (1963) states that meaningful learning occurs when new ideas are integrated with existing cognitive structures. Such integration can be measured by comparing aided recall scores for subjects who receive text preceded by a headline and material without a headline.

It would be useful to investigate the semantic frames of readers under two conditions: text with a headline and a text without a headline. According to Biocca's theory (1991) of semantic framing, a reader's semantic frame will change as the reader fills in details from the text. If readers have a different starting point (headline vs. no headline), the details in the various frames should be different, with the headline condition exhibiting a more highly integrated schematic frame.

Schema theory in general implies that schemata help readers make inferences, both correct and wrong, about the text they are reading. The expectation of the present study is that reader protocols would reveal that headlines affect the kinds of information that people will process and store in their memories. This leads to a research question:

R1) How will the presence of headlines affect the content of reader protocols when analyzed according to schematic frame theory?

If headlines make information processing easier for the reader, it should be measurable by comparing the protocols of subjects who receive headlines and those who do not read headlines before engaging a text.

EXPERIMENT 1

The aim of the following experiment was a simple one: to test whether a headline helped readers process a news story. In other words, can headlines work as advance organizers? The experiment looked at how headlines affect readers' memory of a news story.

Methods

Subjects and sampling. The subjects for this experiment were 36 undergraduate students enrolled in the School of Journalism and Mass Communication at a the University of North Carolina at Chapel Hill. The subjects were volunteers who received extra credit in one of their journalism classes for participating in a volunteer subject pool. The average age of subjects was 20.2 years, 80% were female, and 94% were white. There was one African-American and one Native American in the sample.

Materials. An effort was made to make the news stories and headlines consistent with the real world of newspapers. Materials for this experiment were a stimuli package of news stories and headlines along with a test questionnaire.

Four stimuli news stories were selected from the local news sections of the Portland Oregonian, a well-known newspaper of quality published on the Pacific Coast (see Appendix). Multiple stories were chosen to limit the possibility that some idiosyncrasy of one story might influence the results. Further, exposure to multiple stories mimics the natural reading environment. People tend to read more than one news story at a sitting. It was hoped that multiple stories would make the laboratory environment less artificial.

The selection of the stimuli stories was not random. The stories were published during the first two weeks of October 1992, which was chosen because of the upcoming election. About 40 stories were selected from this time period based on their content. The main attributes were that the story have information that was unfamiliar to students in our geographical area, that the stories have information that was learnable (such as election stories), and that the stories be of adequate length, about 200-300 words.

Story topics were chosen that focused on issues of low involvement that were unique to Oregon. This geographic limitation was designed as a control for the prior knowledge that a typical college student would have about the information that would be tested in the memory questions. Government action and elections were considered desirable stories for the experiment because their content is strongly associated with the type of information provided by newspapers that is suitable for reader learning. On the other hand, feature stories, editorials, and other types of entertainment content (such as sports) were considered to be beyond the scope of this study.

The 40 stories were reduced to eight stories. The main criterion for reduction was based on the qualitative judgment of the experimenter, who decided whether a story could generate an adequate number of meaningful questions for the memory test and how well the story fit into a pattern of news representation. From this list of eight, four were randomly selected for this experiment: the water story, the Hispanic story, the sign story, and the fishing story.

Each of the four stories had two treatments: with and without a headline, for a total of eight stimuli. The headlines were written in a style typical of modern newspapers: a two-line main head along with a two-line subhead in smaller type (see Appendix). Three experts judged that the stories and headlines represented typical news stories. Each judge received the four stories plus 16 other distracter stories and judged them on a scale of 0-10, with 10 signifying that the story represented the kind of story that is typically printed in a newspaper. Each scored a perfect 10, while some of the distracter stories scored a 0.

The news stories were printed on 8 1/2 by 11-inch paper to look as if they were photocopies of real news stories. They included bylines, datelines, and multiple legs of 10-point type. The headlines were printed on separate sheets of 8 1/2 by 11-inch paper. The main head was 30-point type and the subhead was 16-point (see Appendix).

As suggested by previous experiments, headlines are unlikely to have effects on readers under four conditions: 1) if the subjects have previous knowledge or have formed opinions about the subject (Tannebaum, 1953); 2) if the topic of the news story is highly involving or more likely to increase the reader's attention (Mayer, 1989); 3) if the material is not potentially meaningful (Mayer, 1989); and 4) if the reader does not need help in organizing the material (Mayer, 1989). The selection of news stories was designed to control for the first three of these possible conditions. A pre-test of the stories included a focus group session with seven students who confirmed that the stories were unknown to them, that the stories were boring (low involvement), and that the stories contained material that they believed was worth learning.

A series of four packets--each containing the four news stories, half with and half without headlines--were prepared so that each subject read a total of four messages, two from each condition (with or without a headline). Story order in the packets was based on Wagenaar's (1969) method for constructing N X N "digram balanced" Latin Squares. (See Table 4.1). The packets were designed as a between-subject manipulation. This control-manipulation was designed to balance potential topic, order, and repetition effects, which were tested in a post-hoc analysis.

Insert Table 1 about here

General directions for the experiment informed subjects that they would read a series of news stories, and that after reading the news stories they would be asked about what they read. The directions emphasized that they should read the news stories carefully, but at a normal speed.

Measurement. A questionnaire, also on 8 1/2 by 11-inch sheets of paper, included 20 multiple-choice questions. (five for each story). The last page asked subjects about basic demographic data: age, gender, race (see Appendix B).

A series of 32 questions (eight per story) were written. Each question focused on important information central to the stories, which was confirmed through a pre-test of the questionnaire. There was one correct answer for each question: To eliminate ambiguity, the answer was an exact or nearly exact passage from the text. Three plausible alternatives--both semantically and structurally different from the correct answer--were constructed for each question. A fourth alternative (to discourage guessing) was "I am not sure or I do not remember."

The questions and stimuli were pretested by a group of seven subjects, all from the volunteer subject pool. Questions that were answered correctly or wrongly by more than five people were discarded or rewritten as needed to reach the goal of 20 questions for the experiment.

The 20 chosen questions were carefully constructed to capture those ideas that were related to the major concepts of the stories. Mayer (1989, pp. 48-49) notes that valid major dependent variables in experiments designed to measure learning "must involve recall of conceptual information, retention of material in verbatim format, and/or creative problem-solving transfer performance rather than the more traditional measures of overall amount recalled and/or overall performance on comprehension tests."

To assure that the 20 questions did reflect important concepts in the stories, five judges, taken from the volunteer subject pool, read each of the four stories and then rated the 20 questions along with 12 additional questions for their importance to the story. A bi-polar 7-point scale, (Not Important Idea vs. Important Idea) was used. None of the 12 additional question was rated as more important than the 20 used in this experiment. The lowest score among the questions used was 3.75, slightly below the middle score of 4, while the highest score for the questions not chosen was 3.25.

Another pre-test was used to assure the validity of the questionnaire. A group of three judges, all professional journalists, read each of the headlines and the questionnaire to determine whether any headline provided an answer to any of the questions. The judges determined that none of the headlines provided information that helped answer the questionnaire, except for one, which was rewritten. The judges also noted that they had no prior knowledge that helped them to answer the questions.

Each subject answered all 20 questions. The reliability score for 20 questions was Alpha = .68.

Procedure. Each subject received four news stories to read. Subjects were randomly assigned to one of the four stimuli packets. Instructions emphasized that the subjects were to read the stories as if they were carefully reading a newspaper. Subjects were told that after reading the stories they would be asked some questions about what they remembered about the stories.

Subjects also were told that they had a 30-minute time limit in reading the stories (this time limit was determined by the pretest). A time limit was necessary because studies have shown that by slowing reading speed, comprehension increases (Kintsch & Vipond, 1979). The goal was to have the subjects read carefully, but at a normal rate of speed.

After reading the four stories, the subjects returned their stimuli packets to the experimenter. The average reading time was about 16 minutes. Subjects were then given a questionnaire (Appendix B) to complete, and the order of questions was the same as the story order in the stimuli packet. The questionnaires were marked so that the experimenter knew which of the four stimuli packets the subject received, but subjects remained anonymous.

Results

The dependent variable, Memory, was based on the number of correct answers to the multiple- choice questions, which tested ideas central to the meaning of the stories. Each subject contributed a score from 0 to 10 for each condition. A paired t-test was used to determine if the subjects remembered significantly more key ideas from a news story with a headline as opposed to a story without a headline. The conventional significance level of .05 was used.

Main analysis. The mean Memory score for the headline condition was 5.472 with a standard deviation of 1.934. The mean score for the no-headline condition was 4.889 with a standard deviation of 1.997. The paired t-test, with a difference in the means of .5833 and a standard deviation of 1.811 and standard error of .302, indicated that the t-value was 1.93 with 35 degrees of freedom. The one-tailed probability was .03.

Order effects. The experiment was designed to allow a post-hoc analysis of effects that might be due to story order and the repetition of the stimulus condition (headline or no headline). The analysis indicated no evidence of a systematic bias.

Discussion

The null hypothesis is rejected and Hypothesis 1 is supported: Headlines did help readers recall significantly more information from news stories. Headlines appeared to help readers organize information. Headlines did more than the traditional functions (Baskette et al., 1986) of attracting attention, summarizing the story, helping index the news page, depicting the mood of the story, depicting the tone of the newspaper, and providing typeface relief. Headlines helped readers learn and remember information from the news story.[1]

EXPERIMENT 2

The experiment reported here is exploratory and used reader-generated protocols to analyze differences in the memories of subjects. The protocols were expected to provide information about the differences in mental models of readers who read a headline before reading a news story and those readers who did not have a headline. Coding of the protocols was based on schematic frame theory (Biocca 1991) using a system proposed in Cooke (1994).

A preliminary analysis of the protocols allowed for the creation of a coding sheet that condensed the categories for schematic frames to the following:

* Possible World frame, where readers assign characters or actions to some possible world (e.g., this story took place in Portland).

* Discoursive frame, where readers determine that a story is about a topic (e.g., the story is about feuds) or genre (e.g., this story is a tragedy).

* Agent frames, where readers state the role of agents, describe them in some way, discuss their internal states, or state the motivations or goals of the agents. Agents in this case can be institutions and objects as well as people.

* Point of view frames, where the reader uses a statement that acknowledges that the reader is viewing the world through some agent or other point of view. This

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[1] In a related study (Bleske, 1995b), the content and style of headline was found to affect memory for key ideas in news stories, further providing evidence of the ability of headlines to help readers organize a news story.

468

category was eliminated from the judges' coding sheets because of the limited nature of the protocols, which contained no statements reflecting a point of view other than as a third-person voyeur: someone who appears to be not really involved with the action.

* Narrative frames, where the viewer references either an "event" (a single action that has occurred within the story) or an episode (the causal relation among a series of events or the consequence of an event).

* Ideological frames and Self-schematic frames were eliminated from this analysis because there were no examples of these types of frames in the protocols.

Further, each of the frames was given one of the following subcodes that described the dynamics of the organization of the message within the frame (Cooke, 1994). These included: Non-judgmental, which was the default coding and the most likely coding for a proposition that simply related a fact direct from the text; Confused, which was the subcode for mistakes by the reader; Value-laden, in which the comment reflected some negative or positive judgment; and Inferred, which described those comments that were not explicit in the text.

Methods

Subjects and materials for protocol analysis. After a rest and participation in a distracter task, the subjects (same as in Experiment 1) read two more stories. The materials for this part of the experiment--instructions, headlines, news stories, and questions--were presented on computer screens of IBM-PCs and generated by Micro Experimental Laboratory (MEL) software. The stimuli included the first three paragraphs from two news stories, an election story and a hospital story, along with a headline for each story (See Appendix). The stories, a campaign story and a hospital story, were written by the experimenter, who based them on actual news stories from a regional newspaper.

Each subject read the two stories, one with a headline and the other without. There were four stimuli created: Story 1 with headline; Story 1 without headline; Story 2 with headline; Story 2 without headline. Four treatment groups, with two stories each, were created so that story order and condition were counterbalanced.

After the second story, an open-ended question appeared on the screen. Subjects were given a sheet of paper to record their answer to the question, which asked them to retell the story in their own words. The goal of asking the open-ended question was to require the subjects to report their memory of the SECOND story they read. For half the subjects, this story would be preceded by a headline, for the other half, there would be no headline.

Instructions for the experiment told subjects that they would have to answer some questions about the stories they read. Before each headline appeared on the screen, subjects were asked to carefully read the headline. After the headline, instructions told subjects that they would read a news story, one paragraph at a time.

Equipment. IBM-PC computers were used along with MEL software. The software is well-known in psychology and is often used in experiments.

Measurement. The headline or no headline treatment was the independent variable of this experiment. Two judges, blind to the treatment conditions, analyzed the content of subjects' protocols. There were nine protocols (one from each subject) available for each of the four stories, or 18 protocols for each of the treatments (with headline or without headline). Contents of the protocols were analyzed by proposition (van Dijk, & Kintsch, 1983; Kintsch, & Vipond, 1979): Propositions contain at least one noun and predicate; they are the smallest unit of knowledge that can stand as a separate assertion. The judges then used a scale developed by Cooke (1994), and modified for this experiment, for categorizing the propositions as schematic frames.

Overall, in coding, the judges agreed on 86% of the propositions. The disagreements by the judges were resolved through consensus.

Results

Post-hoc analysis of protocols. Coding of the protocols led to the classification of 602 propositions: 312 for the headline condition, 290 for the non-headline condition. About 80% of the propositions mimic the text of the original stories. Of interest in this analysis are the 114 propositions (about 19%) that represent the schema-based inferences of the subjects.[2]

In this section of the analysis, numbers mean less than the qualitative insights. A clear pattern emerges from the coding: subjects who received no headline provided protocols that recalled the stories in ways different from subjects who read a headlined story. The headlines clearly affected the mental models formed by the readers.

These differences are seen in the following examples. They are taken from two of the 18 subjects who read the story about political candidates. One reader had no headline. The text of this reader's protocol follows:

> Republican candidate (male) Meeker, 67, supports free trade with Mexico. He says it will create new jobs for the region. When asked by a group of Hispanics (Hispanics for Unity) if he would remember them once he was elected, he said he would consider hiring a Spanish speaker as a member of his staff.
>
> (Female) Democratic candidate Kelley, 35, is opposed to free trade with Mexico because it would cause American jobs to be lost, and labor unions would suffer. She said she hopes labor will speak up at election time as it usually does.

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[2] In a related study of the protocols (Bleske, 1995a), it was hypothesized that the headline condition would lead to an increase in inference making by the subjects. The hypothesis was supported. Further, evidence indicated that headlines made it easier for subjects to process the first paragraphs of the news stories.

This protocol was the most complete of any, recalling and listing 27 facts of the 44 in the story (average recall was 12 facts). This organization was typical for the nine subjects who read a non-headlined version of the political story. Five subjects used this organization: listing all the aspects of one candidate and then all the aspects of the other candidate. The other four subjects in the non-headline condition borrowed the organization of the story, which directly contrasted the candidates by listing one candidate and then the other and then back to the first and finishing with the second.

The following text is the protocol of a reader who had a headline on the story:

> It's election time and the Republicans and Democrats are sharing their views. The Republican (Meeker) has promised Hispanics that they will be an integral part of the future. Meeker will hire a Hispanic if elected and make sure that jobs are available for them. The Democrat is opposed to the Republican's idea of free trade with Mexico. The Democrat is looking after the labor groups. He promises that their jobs are secure and that no foreigners will infiltrate their towns. The Republican and Democrat agree that the real views will come out on election day. The majority's voice will be heard.

This protocol began with the inference that it was election time. None of the non-headline protocols made that inference, while five of the nine with the headline did and did so at the start of the protocol. Although the headline did not mention that the story is an election story, it did say that a candidate was seeking votes. Yet this is not much more descriptive of an election than was the first paragraph of the story, which strongly implied that it was election time. The main subjects of the stories were introduced as candidates for Congress and as foes.

It appeared that for some of the headline readers, the headline helped them access a schematic frame for elections and this frame helped them to organize the story. But, as suggested by Mayer (1987, 1984), advance organizers, which headlines appear to be, affect the type of information recalled. Likewise, research on mental models indicated that they were not good structures for recalling verbatim text, but instead helped readers integrate themes and ideas into established schema

(McNamara et al., 1991). Therefore, subjects are more likely to make inferences representative of schema intrusions when the headline works as an advance organizer (what Mayer [1987] called assimilative encoding), while subjects without the advance organizer are more likely to recall facts such as ages, names, and gender (what Mayer called additive encoding).

Without a headline, readers began the story with a task orientation: "I will memorize facts because I know that this is an experiment and I will be required to recall facts." Instead of an election schematic frame, it appeared that the readers of the non-headline story either used the organization of the story or focused on the main agents in the story: a Republican, a Democrat, Hispanics and Labor.

The other thing that happened was that seven of the nine headline protocols of the election story made some sort of value-laden comment about the agents in the stories, while only one such comment was generated in the non-headline version. It should be noted that the headline contained no value-laden information.

The influence of schematic frames also was apparent in the transplant story. The headline in this case stated that a feud has ended with an agreement. A schematic frame for feuds was used by some of the headline readers in their protocols. Only three of nine in the non-headline condition mentioned the animosity among hospitals, which is mentioned in the final paragraph of the story, while seven of nine in the headline condition mentioned the animosity. Further, the three in the non-headline condition mentioned animosity at the end of their protocols, the same organization as in the story, while in the headline condition, three of the protocols mentioned the animosity in the first paragraph.

Also, two other protocols in the headline condition began with a phrase taken directly from the story, "collaborative effort." This phrase, mentioned by no one in the non-headline condition, was linked directly to the animosity paragraph, where it served as a bridge between the statement that there is animosity and why there is animosity.

Analysis of the protocols suggests that a schematic model formed after reading the headline was based on the connections between the information in the reader's short-term memory and prior knowledge. The headline appeared to provide the reader with material for building a schematic model that is relevant to the text.

Schematic frames. According to Biocca's theory (1991) of semantic framing, a reader's semantic frame will change as the reader fills in details from the text. If readers have a different starting point (headline vs. no headline), the details in the various frames should be different, with the headline condition exhibiting a more highly integrated schematic frame.

In this study, it was hoped that schematic frame theory would provide a method for quantitatively indicating differences among protocols from readers of headline and non-headline stories. But because of the short length of the stories, there were limited findings for the framing of the stories between conditions. See Table 2 for a chart of the codings.

Insert Table 2 about here

The coding for semantic frames describes the types of inferences that readers made in their protocols. In the hospital and the campaign stories (especially in the campaign story), readers were more likely to infer cause-and-effect relationships in their narrative frames when they were furnished the headline. And, in the candidates' story only, readers also made inferences about descriptions of the agents at a much higher rate than in the non-headline story.

Two interesting patterns emerge when the campaign and hospital story are compared. Because the campaign story has much more description of the agents, readers who did not have a headline focused on description (96 compared to 62 for the headline condition). It appears that readers who lacked a headline and thus a clue about how to organize the story focused on the text for a clue and fixated on agent descriptions as an organizing device. But in the hospital story, without as much description and more abstract agents (institutions vs. people in the campaign story) readers were more likely to focus on the narrative frame of the story, regardless of the condition.

The election story, for example, included the following inferences from the headline condition: readers described work shipped to Mexico as "hard," the Democratic candidate was motivated by her support of labor groups, and she talked to labor groups because she wanted their votes. Nothing like this appeared in the non-headline protocols, where the most common inference was the fact that the Republican in hiring a Spanish-speaking staffer might hire a Mexican.

With longer news stories, the results of the schematic frame coding might have been more extensive and allowed for a more rigorous analysis. Subjects appeared to be unwilling to stray beyond a straight narrative of the story. About 98% of the comments were from the point of view of a third person who has no role in the story. A more involving, longer story (involvement was controlled for in this experiment) might have provided richer differences in protocols.

SUMMARY AND CONCLUSIONS

Headlines helped readers recall information from a news story, and they also affected the type of information that readers process and store in their memories.

According to a post-hoc analysis, headlines led subjects to create mental models of the stories that differed from the models formed by subjects who did not have headlines precede the stories. The differences in the mental models were manifested by organization and content of the protocols. In general, subjects who read headlines appeared more likely to take cues from the headline in organizing information from the story and integrating prior knowledge with knowledge from the stories.

A theory of news headlines would suggest that headlines help readers frame the news they are about to read. This type of framing also can be inferred from previous studies that suggested that headlines affected how people judged the subjects of stories, such as the guilt or innocence of an accused criminal (Winkel, 1990; Pasternack, 1987; Tannebaum, 1953). The results of the current study go beyond the concept that headlines bias thinking about the news subjects and suggest that headlines can affect what readers remember from the stories. This is a new finding and adds understanding to the role of the headline in newspapers.

This study provides some clues about how headlines help readers process information. Evidence from the reader protocols supports Mayer's theoretical explanation (1987, 1979) that AOs build external connections between the reader's prior knowledge and the text, integrating incoming information with the reader's existing knowledge. The protocols provide numerous examples of readers' real world knowledge intruding into the protocols when a headline is part of the news. Aided by headlines, readers integrated the story information, which led to inferences and a mental model that reflected the "real world experience" of the subjects.

When news stories were preceded by headlines, readers were more likely to include inferences and value judgments about the main agents of the stories. Instead of just providing facts from the story, the readers showed that the facts had become integrated with information that had been stored in their long-term memories. It appears that without a headline to help integration and organization, some subjects memorized details.

The analysis of the protocols according to Biocca's theory of schematic frames (1991) was exploratory. It appeared successful, creating a clearer picture of the mental processes affected by a headline. The classification of each proposition of the reader protocols suggests that headlines create schematic frames for readers and the frames affect what readers remember about the story. The pattern of memory supports Biocca's contention that a theoretical model could specify the cognitive procedures, or schematic frames, that are active in generating mental models. These frames access a person's schemata and help organize the information from the semantic frames of the message (Biocca, 1991).

Biocca's schematic frames allowed a quantitative analysis of the readers' protocols. The analysis picked up differences between the two news stories used: one that had abstract agents (hospitals) and more concrete agents (political candidates). In the hospital protocols, the agents are located in a spatial world by all the subjects, who tended to remember a sequence of events influenced by headline cues. But when the agent is a political candidate, the spatial world is less likely to be recalled while specific descriptions of the agents are more likely. When a headline is present, fewer text-based descriptions are present, but there is an increase in descriptions that are based on reader inferences about political candidates.

From this study, it is possible to sketch a theory for newspaper headlines. A headline has typographic prominence and placement above a story and provides strong cues for cognitive processes. An effective headline provides a way of organizing the concepts that a reader needs to understand a news story. This organization occurs in short-term memory, where material is made available from the senses to be integrated with prior knowledge held in long-term memory. The effective headline helps the reader integrate concepts from the news story and a schematic model is formed while reading the headline. The headline provides the reader with material for building a schematic model that is relevant to the text.

Limitations. This study has four major limitations. First is the challenge to validity created by the laboratory setting. Second is the nature of the stimuli, which, despite efforts to make the stories and headlines read as real newspaper stories, have low ecological validity when compared with a real newspaper. The third major limitation is the use of student subjects, who are very different from the average newspaper reader. Future studies--in the field using real newspapers--may yield interesting results.

The fourth major limitation rests on the sample of messages. Although two messages were used to limit the possibility that an idiosyncrasy of any one message was responsible for the results (Jackson, 1992), the message sample was not random nor was it designed to be representative of newspaper content.

Other limitations affect the understanding of the results. There may be idiosyncracies in the messages, or the manipulations, or the subjects that led to the positive and negative results reported in this study. For example, the headlines used may be more effective than the typical headline used in a newspaper, or the content of the news stories may be a critical factor in bringing about the reported effects.

Future studies. As newspapers move toward their electronic futures, the role of headlines may become more important as readers are faced with an increased number of messages. Further studies of headlines could isolate other content features of the headline summaries that might make them more effective in helping readers learn. The current study suggested that there is a strong linkage between the headline and the lead paragraph as they help the reader form a mental model of the story. Timely probes, based on Biocca's schematic frame theory (1991), could unravel how different message features affect reader processing of the news.

Final summary. This study supports the general idea, echoed in many of the studies involving headlines: Readers take cues from headline, which are more important than journalists have thought. Although this study has limitations, it clearly indicates that headlines help readers organize news stories and learn from those stories. Newspaper headlines appear to function as organizers, which integrate new ideas with readers' existing cognitive structures.

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Table 1
Latin Square Design for Experiment 1

Story Topic and Condition Order
(H= with head; NH=no head)

Reading order	1st	2nd	3rd	4th
Story Packet				
1	A	B	C	D
	NH	H	NH	H
2	B	D	A	C
	NH	H	NH	H
3	C	A	D	B
	NH	H	NH	H
4	D	C	B	A
	NH	H	NH	H

A = Water Shortage Story
B = Hispanic Protest Story
C = Sign Ordinance Story
D = Fishing Proposal Story

Table 2

Number of Propositions by Schematic Frames by Story and Treatment Condition: Experiment 2*

	HOSPITAL		CAMPAIGN	
	Head n=9	No Head n=9	Head n=9	No Head n=9
SCHEMATIC FRAME				
Narrative Event	68	58	41	50
Narrative Episode	1	7	0	4
Narrative Event Inferred	20	10	35	11
Narrative Confused	4	3	3	3
Agent Descriptive	18	17	62	96
Agent Descriptive Inferred	4	0	17	7
Agent Confused	2	5	2	2
Agent Motivation (Inferred)	0	0	7	0
Possible World Spatial	9	9	5	5

* Coded 588 propositions, another 14 propositions were not relevant to the texts

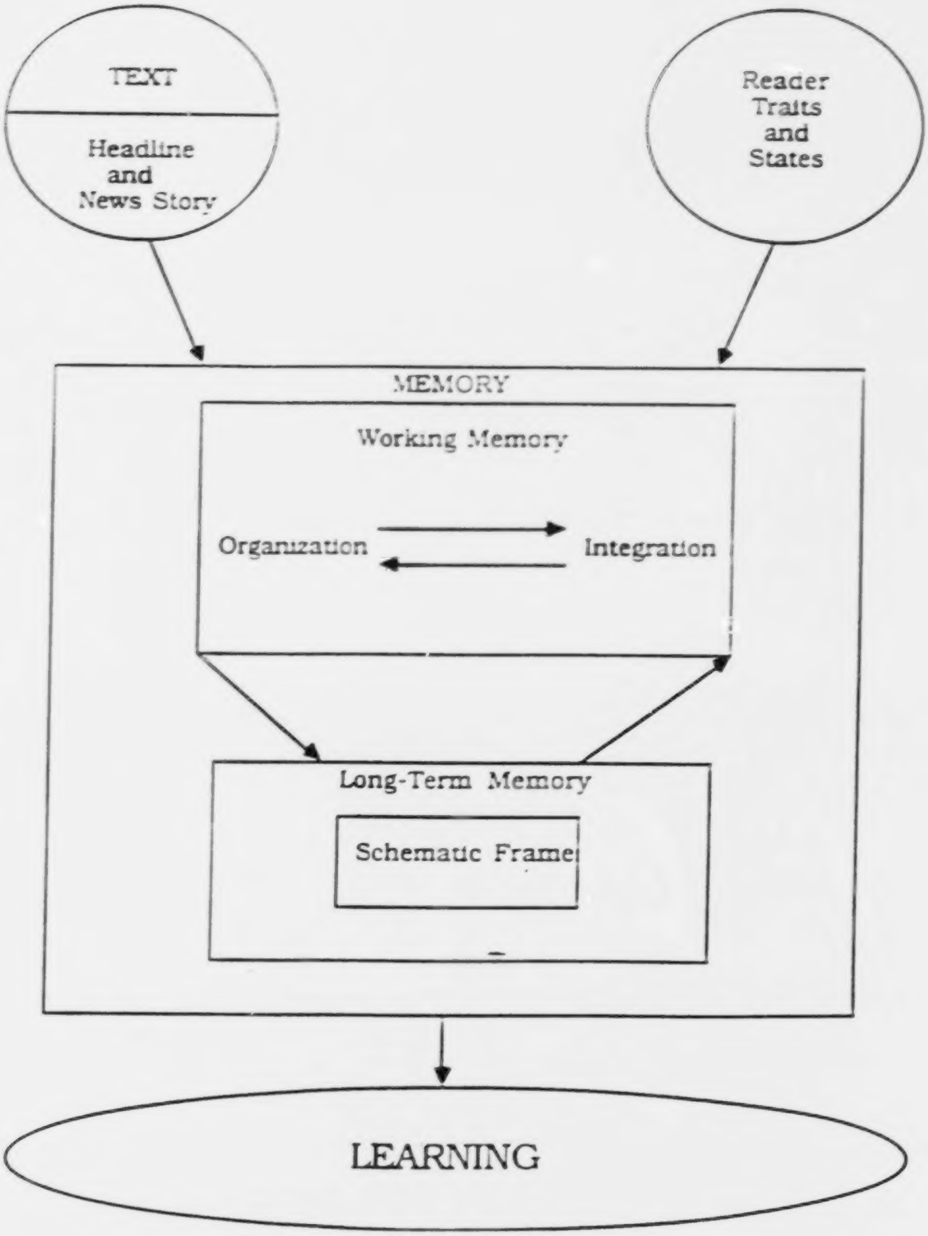

Figure 1: Theoretical model of headline processing

The Influence of Presidential Agenda-Setting on the Mass Media's Coverage of the "Information Superhighway"

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Introduction

The purpose of this study is to attempt to examine how U.S. President Bill Clinton[1] influences different news media including: newspapers, news magazines, and specialized computer-related trade magazines. In particular, it tests how successful the President is in transforming a topic with specialized coverage, the "information superhighway," which was receiving a majority of its coverage in computer and academic journals, into front page news. Can the news process and the values that automatically make Presidential utterances newsworthy (Sigal, 1986) hasten the development of an issue and the diffusion of an topic across different media? Can this process place a single issue on the media's agenda? The President of the United States is probably the most influential figure in the nation. He is a major news source for every type of news media (McCombs, 1992; Ryan, 1991) and he appears in the news on almost a daily basis. Based upon his relative importance to the country and as a media resource, it is logical to assume that he would possess the ability to sway the media.

A single issue is used to trace the President's ability to set the media's agenda over time. This issue is the "information superhighway" which is also know as the NII, National Information Infrastructure. It was chosen because it was known to have been endorsed by the President[2] and because it was essentially an example of "staged" or "artificial" news. "Staged" news is news that is based upon issues or occurances which are purposely created for the benefit of reporters. "Spontanious" news events include reports of actual occurrences -- wars, crime, riots, etc. "Staged" events include: (1) "event summaries"-- stories which make an event created to purposely insert an issue into the news sound like an event, for example, the overall problem of drugs in the nation's schools; and (2) "pseudo-events"-- events staged for the purpose of being reported on, such as, demonstrations in front of abortion clinics (Funkerhouser, 1973) or the New Bedford delegation to Nicaragua in the summer of 1987 (Ryan, 1991). The concept of "artificial" news and "real" news does not mean to imply that one type of news is any better than the other, just that the two types of news arise from different types of events.

The idea of the "information superhighway" would probably not be as important an issue in the news, if it were not repeatedly mentioned by the President of the U.S. A recent bibliographic analysis of the volume of newspaper and magazine articles published about the info-highway showed that the aggregate number of stories increased dramatically at about the time that President Clinton acted upon the issue (Pavlik & Szántó, 1994a, 1994b). By repeatedly linking the issue to the country's economic health, both President Clinton and Vice President Al Gore have made this issue more salient and changed how it is viewed by the press (Thalhimer, 1994b). Before the President's actions, this issue was a major concern of academics and corporate entrepreneurs, but it did not demand immediate attention in the political arena and there was little pressure for governmental action. After the President acted, the "information superhighway" became an issue of general public concern that had to be acted upon by the U.S. government[3] and by the President of the U.S.

Past studies have used two different sources to determine the President's agenda. The President's State of the Union address was used by Wanta, Stephenson, Turk, and McCombs (1989), and the *Weekly Compilation of Presidential Documents*[4] was used by Wanta (1991, 1992) to determine the President's agenda. Both of these documents are constructed by the executive branch of our government and reflect the administration's public face. However, they do not necessarily reflect the actual agenda of the President since many issues are dealt with outside of the public arena. Either source could be affected by many different factors, such as political considerations and external timetables. For example, this documentation could indicate emphasis on an international telecommunications conference that happened to be scheduled for that week even though the President was more interested in a potential war in Zaire. Over time these distortions probably balance out; however, the chances that there will ever be a one-to-one relationship between these documents and the President's actual agenda is slim. Since the *Weekly Compilation of Presidential*

Documents reflects the President's agenda on a weekly basis, and by virtue of this is a more precise instrument, it will be used in this study to measure the President's agenda even though it is an imperfect measure.

For the purposes of this study the term "information superhighway" is designated to mean any sort of large (regional or national) electronic network which is being used to transmit digital information. The phrase "information superhighway" is a concept which has no universally defined definition and seems to be continually reshaped to serve different purposes.[5] Terms considered synonymous with the terms information highway include: data highway, electronic superhighway, national information infrastructure, data superhighway, electronic highway, info-highway, and info-superhighway (Pavlik & Szántó, 1994a, 1994b).

Theory

The concept of the media controlling what people think about was first raised by Walter Lippmann (1922) and involves the notion that the public learns what issues to think about, but not necessarily what to think, from the media (Cohen, 1963). Today this concept is called agenda-setting, it is the underlying theory upon which this study is based. The agenda-setting theory was first tested by McCombs and Shaw (1972) in a study of how news coverage influenced the public's perception of the important news of the day. Other researchers soon followed with studies examining media effects on public opinion, rankings of issue importance and the factors contributing to the effects of the media (Turk, 1987). Since that time, agenda-setting theory has grown to encompass the study of many aspects of the agenda-setting process and has come to focus on both the origins and effects of the media's agenda (Gandy, 1982).

Three types of agenda-setting are defined in the literature: media agenda setting, public agenda setting, and policy agenda setting (Rodgers & Dearing, 1987). Public agenda setting, the study of how the media's content affects the public's agenda, and policy agenda setting, the study of the relationship between the ruling class's decisions and actions, and public opinion, are not dealt with in this paper (pp. 556, 559). Media agenda setting -- how news sources and other external factors influence which issues appear in the media -- is the branch of agenda-setting theory that will be used in this study (pp. 557-558).

Researchers have proposed a paradigm which views media agenda-setting as an on-going interactive process. Megwa and Brenner (1986) theorize that the relative importance of issues portrayed in the media is determined by actors outside of the media themselves. This paradigm sees the activities of public information officers and other actors (working in both the private and the public sector) attempting to place events or issues in the media as having a direct influence on reporters and on what appears in the news. Turk (1987) found that reporters' stories used all or part of the information provided by public information officers at private companies and government public information officers about half of the time, influencing the content of the news in the desired manner. This means that in about half of all the news stories produced on a specific topic, reporters used all or part of the information that was provided by the information officer in the form of an information handouts. However, studies of the influence of the White House's press office have not been as decisive.

Turk's (1987) study found that stories about Presidential legislation were more likely to be unfavorable and that White House reporters tended to use multiple sources for White House stories. As a result, the White House press office was not as successful in influencing the media as the afore-mentioned public information officers. However, this tendency by the press may actually influence the kinds of issues the President gets involved in. According to the "news discrepancy theory of opinion change," Presidential popularity rises when the news is "good" and falls when the news is "bad" (Brody & Page, 1975). This means that there is an expectation that the President's popularity will rise when people receive news about something that will make their lives better (i.e., the creation of new jobs) and that the President's popularity will fall when the people receive negative news which affects their lives (i.e., new income tax legislation). This theory is based on the fact that many government officials see the press as not only representing public opinion, but as public opinion itself (Sigal, 1973).

By testing the effect of the President's actions on the press, it will be possible to establish how successful the President is in placing an issue on the media's agenda. If the President can regularly receive "good" press from an issue like the "information superhighway", it is likely that he will champion other positive issues in the future, assuming that he is motivated by a desire to strengthen his public image and to win future elections. If the President can effectively influence one issue in the media, it is likely that he will try to affect other similar issues in the future.

Past studies that have tried to demonstrate that the President directly influences the media have had mixed results. The question of whether the President is able to set the media's agenda or even influence it is complex and has been shown to be influenced by a variety of intervening factors (Wanta, 1991). Wanta (1992) found that the press's past relationship with the President, the importance of the issues being addressed, the other agenda items a specific agenda item was competing with, and the type of media being influenced were all important factors in predicting what got into the media's news coverage. Another study found that the relationship between the President and the media flowed both ways. Sometimes the President influenced the media and at other times the media influenced the President. This relationship varied with time and the issue being examined (Wanta, Stephenson, Turk, & McCombs, 1989; Wanta, 1991).

This study will try to avoid some of these problems by focusing on coverage of an issue that past studies have indicated is linked to, if not driven by, President Clinton. The watch-dog theory, which includes the concept that it is the press' duty to bare the governments secrets to the people, assumes that reporters will always be on the watch for abuses by those people who run our government (Gleason, 1989). For this reason, it is likely that the press will report upon the President's actions, no matter how trivial they are, in the hope of identifying an abuse of the President's power (Shaw & Martin, 1992). Based upon this, one would predict that the press will almost always report on the "information superhighway" issue, provided that the President is acting upon it.

This does not imply, however, that the "information superhighway" would not have been an issue in the news had the President not shown an interest in it. But it should be noted that the development of new technological innovations is a gradual and slow process which actually takes place over the span of many years and is not particularly newsworthy in itself. Certain topics, such as the present controversy between the nation's cable companies and the nation's telephone companies, developments in the personal computer market, and the increased use of e-mail would probably all have been reported regardless of the President's actions.

This study hypothesizes that these new innovations would not be reported as often or as positively in the popular press if the President were not endorsing them. Without the President's participation, a majority of these issues would have still been reported on but the articles about them would have appeared in academic and industrial trade publications. The "information superhighway" is a topic which does not always readily meet the media's usual newsworthiness standards. It has had a slow-onset and is not particularly dramatic or exciting. For decades, people have written messages to each other, written and circulated directories, and posted policies. The fact that these activities are now being performed electronically may be novel, but it is not revolutionary. The Internet and other electronic communication networks have existed since the late 1970s, and the term 'information highway' was already being used in the late 1960s to describe a national computer network (Tracing the origins of the "information superhighway", 1994). Many researchers and scholars have been using the existing capabilities of these computer networks, such as e-mail and notes files, since the early 1980s.[6] For the general public, the issues involved in the "information superhighway" have a low salience because they are actually "old" news. However, in the business and corporate circles which the President seeks to attract investors from (Sigal, 1973; Heuvel, 1994) the issues are probably highly salient (Thalhimer, 1994b). News reporters who have seen computers change their work routines in significant ways and who can now access (or at least know fellow journalists who access) news databases and other information resources could therefore see computers as being highly salient and therefore be more willing to report on the "information superhighway". Due to all of these possible influences, we may assume that the "information superhighway" is a topic which was at least partially "created" by the press and the President, and is sustained as a major topic of interest by the President's attention to it.

The question of why the "information superhighway" has remained in the news for so long is complex. An answer may lie in Lang and Lang's (1983) paradigm of consensus building. This paradigm sees the growth of the public's interest in an issue as a cycle. In this cycle the public, the press, and the public official or source of the news mutually reinforce each other and create more interest in a given issue. These three groups will continue to reinforce one another and support the growth in the number of stories on a given issue which appear in the press, until the public tires of an issue and a new issue replaces the older issue. Based on this theory, the "information superhighway" could have been an issue caught in one of these consensus-building cycles. If this were the case, the President's decline in attention to the "information superhighway" after April 1994 might have been caused by the public's loss of interest in the issue. The result would be that the issue would no longer be of public interest and would drop out of the media almost entirely. Since new technological innovations and computerized networks are so prevalent and pervasive in our society, however, it is unlikely that this is the case and that they will totally drop out of the media's agenda. Yet it is possible that interest in the issues would decline to a level slightly above their level before the President started addressing the issues. Also, if the President's interest in the issues was fueling press interest in the issues, interest should increase after the President's actions and decline when the President is not acting on the issues.

Lastly, the question of why the President would be unable to influence different types of media to the same extent needs to be addressed. Past studies have established that there are some differences in how the different media cover a single issue and that some types of media follow the lead of other types of media. This relationship between different media was demonstrated in the case of the New York Times, which tends to report on an issue before any other newspaper or other type of printed news medium (Shoemaker, Wanta, & Legget, 1989; Winter & Eyal, 1981).

Stories with certain type of media formats are more readily covered by the news. For example, stories with extensive background reports accompanied by dramatic film footage are more likely to be picked up by the media (Ryan, 1991). Since any day-to-day action by the President would produce more print materials (in the form of bills, decrees, and federal documents) and very few photos or controversial statements, it is logical to assume that printed news sources which have more space to reprint the President's documents would be more likely to cover Clinton's activities while those with very little space would not. It is also possible that Presidential press conferences and State of the Union addresses which mention the "information superhighway" would be more likely to be reported on by newspapers that could run the news in the next day's paper, and would not be covered by newsmagazines which have relatively small news holes and may have to wait over a week before printing the news.

Other studies had trouble finding any difference between the amount of coverage an issue received in a particular medium and the amount of coverage the same issue received in another medium (Tipton, Haney, & Baseheart, 1975; Shoemaker, Wanta, & Legget, 1989). Troubles with intervening variables and overly broad issues were hypothesized to be the cause of these problems.

Hypotheses

The hypotheses which will be tested in this study include:

H_1: The more the President talks about the "information superhighway," the more the issue will be covered in the media.

H_2: *The President's ability to influence the media will vary by the type of medium which is examined, such that tover time he number of stories appearing in newspapers will increase the most, the number of stories appearing in popular magazines will increase less, and the number of stories appearing in specialized trade magazines which were already covering the issue will not change at all.*

These hypotheses predict that the President has a major influence over whether the news media reports on the "information superhighway." They forecast that President's agenda effects the media's agenda, that the President can change the media's agenda by talking about an issue, and that coverage will decline in the absence of his actions. They also predict that when the President stops talking about the "information superhighway," the media's level of interest in the issue will return to the level that it was before the President showed any interest in the issue.

It is assumed that if the President is acting on the "information superhighway," he is producing documents, policies, speeches, and proposals which deal with the issue. Although the President's interest in the issue may not be direct proportional to the amount of information which his office produces on an issue, it can be assumed that the quantity of material produced on the issue, by the President will be related to the President's interest in the issue. It can also be assumed that this relationship between the amount of materials produced by the President and his staff and the President's interest in getting the topic of the "information superhighway" into the media will remain consistent over time. The Weekly Compilation of Presidential Documents is the executive branch's official record of these activities.

Another concept which will be used in this study is the media's agenda. The media's agenda is theoretically the issues which appear in the media the most often. It is realistic to assume that the media will report upon what they are interested in. However, how quickly a story appears in the media depends upon a number of other factors including: how important the other news stories which the story is competing with are, how important the source of the story is, and whether the story will lose its freshness if it is not published immediately. If the media are interested in an issue, they should report on it and report on it often.

Three different types of media are examined: newspapers, popular magazines, and specialized computer-related magazines in this study. A *type of media* is the concept name for the intermediate agency that enables communication to take place (O'Sullivan et al, 1983). In this study a newspaper is a daily publication which tells the news and carries advertisements and other information. It is produced in either color or black-and-white on newsprint, and is consumed by the general public. A second type of medium examined is the popular news magazine, which is a weekly color publication published on glossy paper which carries stories, articles, and information to the general citizenry of the United States. Trade magazines are those publications which are specifically created for an elite audience, which are published on a weekly basis, and which are very narrowly focused on a single genre of interest. In this study, the only specialized trade magazines included are those solely devoted to covering computer-related and technological issues and those which are specifically marketed to and consumed by computer professions and people interested in computers.

According to the afore-stated hypotheses, newspapers such as the New York Times, which have a high proportion of the elites President Clinton wishes to attract, will be the most influenced by President Clinton's activities. Popular news magazines (which cater to the general public) will be influenced to a much lesser extent. Computer trade magazines, which already had the issue on their agenda before it was championed by President Clinton, should not be affected at all. Because of the minimal effect upon these specialized computer-related magazines, they act as a control group for this study and provide a measure of the public's actual level of interest had the President not acted upon the issue. When President Clinton stops emphasizing the "information superhighway," all three media should retain some residual interest in the topic, but their overall level of interest should diminish slightly and then level off. The agenda of each media type is determined by counting the total number of words written about the "information superhighway" in all issues of a single publications type in a specified period of time.

Method

Time Period

For this study, the smallest unit of time which was examined is a two-week time period. All time periods started on Monday and end on Sunday. Time periods which include holidays were included in the study. A two-week period was chosen because it is the smallest unit of time in which at least one issue of each magazine chosen for this study was published. This time unit also allowed for fluctuations in the daily size of the newspapers included in this study.[7]

The period of time which was examined was from January 18, 1993, through September 25, 1994. January 18, 1993, was selected as a starting date because it was the first Monday in which the Weekly Compilation of Presidential Documents contained materials produced by President Clinton. It also occurred one month before President Bill Clinton and Vice President Al Gore issued their first policy paper on the role of the "information superhighway" in the nation's economy (Clinton & Gore, 1994; Pavlik & Szántó, 1994a, 1994b). By studying the number of words which appeared in the media before the President started to act on the "information superhighway" issue, it was possible to establish the issue's initial prominence in the media. September 25, 1994, was chosen because it was the last Sunday that the Weekly Compilation of Presidential Documents was available for when this study was undertaken; however information about the different media was coded until October 2, 1994, to provide more complete graphs. During the summer of 1994 President Clinton had other concerns and did not spend too much time discussing the "information superhighway," so this period of time should reflect the President's inaction on the issue.

All weeks during this period were examined. Other studies have identified a significant one-month time lag between an agenda setter and the agenda to be set for both newspapers and popular news magazines (Wanta, Stephenson, Turk, & McCombs, 1989; Wanta, 1992; Winter and Eyal, 1981). This previously established relationship could have been used as a basis to sample six-week blocks. However, President Clinton's activity was so concentrated from September 1993 through February 1994 that it is possible that random samples from this time period would not have revealed any pattern.

For the purpose of this study, three distinct stages in the agenda-setting process are theorized to have taken place during the selected 21-month period. Pavlik's and Szántó's (1994a, 1994b) study of the info-superhighway established four separate stages in the "information superhighway" literature's life cycle, three of which will be used in this study (Figure 1). The first stage, identified by Pavlik & Szántó was not included in this study, because it took place from January through December 1992. It was marked by very little growth in the literature (Pavlik & Szántó 1994a).

The second stage which Pavlik and Szántó defined took place between January 1, 1993, and August 31, 1993. It was marked by a significant growth in the amount of material printed on the topic. For the purposes of this study, this stage will be called the initial growth period and will start on January 18, 1994, and run through September 12, 1993. It will start when William Clinton became President of the United States and will end when he released a document called the National Information Infrastructure Agenda for Action (Clinton, 1994).

The third stage created by Pavlik and Szántó was from September 1, 1993, through February 28, 1994. During this time period the amount of literature on the topic grew exponentially. In this study, Pavlik's and Szántó's third stage will be enlarged slightly and used as the second time period. Because of the quantity of material being produced during this period it will be defined as the highly active period in the life cycle of the literature on the "information superhighway," and it will start on September 13, 1993, and run through April 24, 1994. The end of April was selected as the ending date for the highly active stage, because it was the beginning of the next two-week period after April 11, 1994, when the President enacted his last major initiative for the "information superhighway.". It should be noted that during this highly active time period President Clinton, Vice President Gore, and other branches of the Federal Government were actively promoting the idea of an national information infrastructure, NII. For example, on December 21, 1993, Vice President Gore made some remarks about the NII at the National Press Club and on January 13, 1994, he spoke at an "electronic town meeting" hosted by U.S. News Online and CompuServe. Also during this time period, other branches of the government began to take an active interest in the NII. For instance, the U.S. Department of Commerce's U.S. Patent & Trademark Office holds a hearing on the NII and intellectual property rights on November 18, 1993. The fourth and final stage identified by Pavlik and Szántó (1994b) marked the decline of the topic in the press. Since only March and April of 1994 were included in this stage, and President Clinton was still acting on the issue at this time, Pavlik's and Szántó's entire fourth stage was included in this study's second time period.

Though the Pavlik and Szántó (1994b) study did not continue past April 1994, it is obvious that a final stage or time period needs to be defined to mark the beginning of the decline of the literature on the "information superhighway." During this final time period the President stopped talking about the NII and the press started to tire of the topic. The Sunday after the two-week period which included April 11, 1994, is the beginning of this study's third time period. This date happened to be April 25, 1994, and it was a little over a week after the President passed his most recent executive order that required the Government Printing Office to provide electronic document delivery. This period of decline starts on April 25, 1994, and ran through September 25, 1994, which is the end of the time period that this study examines.

Presidential Agenda Measures

For this study the Weekly Compilation of Presidential Documents was used to determine the quantity of material produced by the President in a given week, and thus the President's interest in the "information superhighway" for that week. Since information in this series was not broken into individual stories but was instead divided into very long documents, it would have been counterproductive to count the number of documents about the "information superhighway." Instead of counting the number of stories, this study counted the number of lines in a given document which was about the designated issue, and then converted the number of lines into the estimated number of words which appeared in the document. This procedure was virtually identical to the one used by Wanta in his 1992 study to measure the Presidential agenda. The logic behind this procedure is that since the type face used throughout the publication is fairly consistent, every line takes up an equivalent amount of space and has approximately the same number of words in it. Since the number of words about a topic is a more exact means of determining the amount of space that is devoted to a topic than the number of documents on a topic, it is a more reliable unit of measure.

Media Agenda Measures and Media Types

More than one example of each of the three media were examined. The New York Times, the Los Angeles Times, and USA Today were used to represent newspapers. Time Magazine and U.S. News and World Report were used to represent popular news magazines, and InfoWorld and Computer World[8] were used to represent specialized computer-related trade magazines[9]. Nexis™ was used to locate articles from these publications which deal with the "information superhighway."

The nine synonymous terms for the "information superhighway" identified by Pavlik and Szántó (1994a, 1994b) in their Nexis™-based bibliometric study were used to locate articles in the designated publications. Due to some anomalies which were identified in a pre-test of Nexis™, such as the belief that the term "information superhighway" has become a cliché and should never be used in an intelligent discussion (Thalhimer, 1994), the original nine terms were broadened to capture articles which avoided using cyberclichés.[10] Then each identified article's title was examined to verify that the article was about the "information superhighway." If the article's title did not seem to be related to the "information superhighway,"[11] the full text of the article was examined. If the full text of the article did not seem to deal with some aspect of the "information superhighway"[12] the article was discarded. Articles[13] whose titles or full text dealt with the "information superhighway" were coded. Both the number of articles about the topic and the number of words in each article was recorded.[14] The number of words is what will be used to calculate relationships; however, the number of stories will be used to verify the results.

Intercoder Reliability

Coding was performed by the author. To establish intercoder reliability 10.11% of the data were randomly selected for coding by a second coder. Scott's pi showed an intercoder reliability of .83 for the Presidential agenda, .87 for the newspaper's agenda, 1.00 for the popular magazine's agenda, and 1.00 for the trade magazine's agenda.

Results

As can be seen in Table 1, on the average the Los Angeles Times published the most words about the "information superhighway." It was closely followed by the New York Times which also published a substantial number of worlds on the topic. Combined, these two newspapers contributed over half of all the material coded in this study. The other newspaper which was examined, USA Today, was the third largest publisher of material about the "information superhighway." It in turn was followed by the specialized computer magazines, InfoWorld and Computer World, which when combined contributed slightly more words than USA Today did. Time and US News & World Report published the fewest words about the "information superhighway," around 1,500 words every two-weeks, and the Weekly Compilation of Presidential Documents devoted an equally small amount of space to the topic.

However, when the average number of words which appears in a single issue of a publication is examined, an anomaly emerges. Now the Weekly Compilation of Presidential Documents seems to publish about as many words on the "information superhighway" as the Los Angeles Times. Here the data in Table 1 are deceiving. Unlike the other publications, the Weekly Compilation of Presidential Documents does not in any way restrict the amount of material which it publishes. Because it will publish anything and everything that the President produces,[15] very long technical documents appear in the Weekly Compilation of Presidential Documents which would not have appeared in any of the other media examined. Since the President's agenda found in the Weekly Compilation of Presidential Documents consisted of only a few extremely long documents about the info-highway, the mean number of words about the "information superhighway" which appeared in this publication is deceptive and should not be compared to the means of the other documents.

Also seen in Table 1 is the mean number of words which appear in a single issue of all the other publications which were examined. By examining these means, it becomes clear that the pattern which was established by the mean number of words published in a single publication in a two-week period does not hold for single issues of the publication. Publications of the same media type now no longer have similar means. Though the New York Times' mean is closer to the Los Angeles Times' mean, USA Today's mean drops dramatically, mostly because this publication has far fewer pages per issue than either of the other newspapers studied. Computer World's mean is now relatively large and is comparable with the means of the New York Times and the Los Angeles Times. USA Today and US News & World Report, have similarly small means, and InfoWorld and Time fall in the middle. Also the high standard deviations for the mean number of words published in a single issue for all the publications weakens any interpretations of the relative strength of the means. However, the relative size of a publication's mean does demonstrate which publications were publishing material on the "information superhighway" and which were not. The large standard deviations for all of the publications examined also indicates that articles on the "information superhighway" were not standard fare for any of the publications for an extended period of time.

The pattern established by the mean number of words which appear in a two-week period for a single publication held for the number of words published by type of medium (Table 2). From Table 2 it can be seen that the average number of words printed per issue of a newspaper was lower than the number of words which appeared in a single issue of a news magazine, and that the three newspapers examined in this study contributed about two-thirds of all the material which was coded for this study. Both specialized computer magazines, which published the fewest words per issue and news magazines which published the most words per issue, were dwarfed by the newspapers in this study's data set.

Surprisingly, the lower mean number of words in a single issue of USA Today was able to counteract some of the strength of the relationship between both the New York Times and the Los Angeles Times and the Weekly Compilation of Presidential Documents. As a result, the mean number of words appearing in a single issue of a newspaper was lower than the mean number of words appearing in a single issue of a news magazine. Despite the slight weakness of one popular news magazine, US News & World Report, popular news magazines had the largest number of words per issue of any of the news media examined. Specialized computer-related magazines, which are theorized to not have been unduly stimulated by external agenda-setting, had the lowest mean number of words about the "information superhighway" per issue. For all the data in both Tables 1 and 2, the newspapers always had the largest standard deviations, while the popular news magazines and the specialized computer-related trade magazines always had similar lower standard deviations.

The results of this study were mixed. Hypothesis one predicts that there is a positive relationship between the President's agenda and the media's agenda. Some of the results indicated that this hypothesis was supported, but only under certain conditions.

When correlation coefficients for each publication and the Weekly Compilation of Presidential Documents were obtained for the entire time period which was examined[16] with the three different time lags[17] only four of the correlations were significant (Table 3). The Los Angeles Times, USA Today and US News & World Report showed a significant correlations with a two-week time lag and Time showed a significant correlation with a four-week time lag. These results only weakly supported hypothesis one. It was also surprising that the New York Times, a newspaper which is known to closely follow the actions of the President (Tipton, Haney, & Baseheart, 1975; Shoemaker, Wanta, & Legget, 1989), never significantly correlated with any of the President's actions.

After the number of words obtained for each medium type was plotted against time, the reason for these previously obtained low correlation coefficients became apparent (Figure 2). The data showed that three distinctly different stages in the growth of the literature had taken place. During the first eight months of the study the amount of literature about the "information superhighway" was low, but steady. After the President issued his National Information Infrastructure Agenda for Action (labeled as Event 2 in Figure 2), the number of words published about the "information superhighway" increased dramatically and had more than doubled a month later. For the next seven months the average number of words published on the "information superhighway" continued to peak. After the President's last major executive action on the issue (labeled Event 4 on Figure 2) the amount of material on the topic started to slowly decline. Because a plot of the data supported the theory that the literature about the "information superhighway" was going through a series of different stages, it was logical to use these three previously defined time periods in the life cycle of the literature about the "information superhighway" (Pavlik & Szántó, 1994a) to examine the correlation between the President's agenda and the media's agenda.

Table 4 takes the relationships established in Table 3 and breaks them up according to time period. As can be seen, some of the relationships between publication titles and the Weekly Compilation of Presidential Documents became highly significant when the data are broken down according to which time period in the life cycle of the literature they appeared. However, since the hypothesis was that the media's agenda was being set by the President and not by the individual publication titles' agenda, it was necessary to combine the data for the different publications together to determine the media's agenda and then correlate it against the President's agenda which was represented in the Weekly Compilation of Presidential Documents. (see Table 5). It should be noted that neither Computer World nor InfoWorld ever correlated significantly positively or negatively with the Weekly Compilation of Presidential Documents. Since both of these publications were added to the study to provide a control or null data set which was more likely to be influenced by factors other than the President, they were not included in Table 5.

Oddly enough the resulting table indicated that on the whole the press was lagging behind the President at a different rates during each of the different time periods. This table also shows that a positive relationship between the President's agenda and the media's agenda probably did exist, although only for some time periods and then only within the boundaries of the individual stages of the life cycle of the literature. For the period of initial growth, the press printed articles about the "information superhighway" appeared within the same two-week period as the President mentioned the topic. In the next time period, which is denoted as the literature's highly active time period and takes place from September 25, 1993, through April 24, 1994, the President discussed the "information superhighway" the most. However, during this period the press did not follow the President's remarks at a uniform rate. During the last time period, the period in which interest in the "information superhighway" declined and the President was not discussing the topic as much, the media usually increased their coverage of the "information superhighway" an average of two weeks after the President talked about the issue.

Interestingly enough, when the data were not examined according to which time period it appeared in, most of the significant correlations between the President's agenda and the media's agenda cancel each other out and make it appear that the media are not influenced by the President at all. Table 4 which breaks the correlations up by publication titles, shows that certain publications contributed far more to the overall correlation than other. During the first time period, the New York Times printed most of the articles about the "information superhighway," and it was its significant positive correlation with The Weekly Compilation of Presidential Documents which was probably responsible for the positive correlation of the combined data for all the publications and the Weekly Compilation of Presidential Documents which appears in the first column of Table 5.

During the second time period, the New York Times no longer significantly correlated with the Weekly Compilation of Presidential Documents; however, USA Today did. This time USA Today followed the Weekly Compilation of Presidential Documents with approximately a four-week time lag.[18] Since the both the New York Times and the Los Angeles Times continued to publish more articles than USA Today did during this time period (Table 4),they counteract USA Today's behavior and resulting in the lack of any significant correlation during the second time period.

Unlike the correlations for the other time periods, the correlation for the third time period had more than one significant correlattion contributing to it. During this time period both the New York Times and Time significantly correlated with the Weekly Compilation of Presidential Documents with a four-week time lag, and the Los Angeles Times and U. S. News & World Report significantly correlated with the Weekly Compilation of Presidential Documents with a two-week time lag. Interestingly, USA Today had a significant negative correlation in the third time period which worked against the final significant positive total publication correlation which resulted (Table 4).

Hypothesis two was not supported by the data. It predicted that there would be significantly different positive relationships between the President's agenda and the agenda of the different media types. Table 6 shows how the individual publication types correlated with the Weekly Compilation of Presidential Documents. All rows in Table 6, except the second row in the third time period contain non-significant correlations. In this table, newspapers also almost always correlated with the Weekly Compilation of Presidential Documents to a higher degree than news magazines. However, this standard error of difference between the correlations for the different publication types and the Weekly Compilation of Presidential Documents were not significantly different, and as a result this study was unable to show that the differences between these correlations was due to anything other than chance or error.

As would be expected, Table 6 also shows that there is a relationship between all three types of media, which means that to some extent the different media types may have also been setting the agenda for each other. Newspapers demonstrated both a slight correlation with news magazines and with specialized computer magazines in the third time period. The inverse correlation between newspapers and specialized computer magazines may at first seem surprising, but it is probably due to the fact that specialized computer magazines are often advance dated by as much as a week and because of this may contain older news than their date indicates.

Discussion

This study indicates that the President's agenda setting actions could have affected the media's agenda for the "information superhighway," though with different degrees of success during each of the time periods in the life cycle for the literature. Based upon the results of this study, it is also clear that the relationship between the President's agenda and the media's agenda is complex and that a wide variety of other factors besides the President must also be affecting the media's agenda. Though this study used a different source of the Presidential agenda and focused upon a single relatively non-controversial issue, the final results were similar to Wanta, Stephenson, Turk, and McComb's (1989).

In retrospect, Lang and Lang's (1983) paradigm of consensus building appears to apply to the literature about the "information superhighway." In the first stage of the literature's growth the President, the media, and the public all started to interact and reinforce the legitimacy of the concept of the "information superhighway."

In Figure 2, one can see that before the President started to talk about the info-highway (prior to Event 1), there was already some interest for the topic and articles about the topic were already being produced by the media. However, when the President first talked on the topic (Event 1 in Figure 2) and released his report entitled Technology for America's Economic Growth: A New Direction to Build Economic Strength (Clinton & Gore, 1993), the media responded and the number of words written on the topic started to grow.

By the time that the President released the second major document on the "information superhighway" (Event 2 in Figure 2), National Information Infrastructure Agenda for Action: Executive Summary (Clinton, 1994), the media had already established that there was a society-wide interest in the topic and soon after the event the amount of material produced on the topic took-off. At this point a number of other factors also started to play a role in the media's agenda and also disrupted and undermined the relationship between the President and the press. These intervening variables included: Vice President Gore's numerous public speeches on the NII in December 1993 and January 1994; rumors of the possible merger of two telecommunication giants Bell Atlantic Corp. and Tell-Communications Inc. in early October of 1993 (Pavlik & Szántó, 1994a); and a January 11, 1994, "Information Highway Summit" in Los Angles where Reed Hundt, the new head of the FCC, announced the FCC's plans to regulate the "information superhighway" (Smillie, 1994). Under the influence of all of these different factors, the literature reached a peak in early January in 1994. The President mentioned the "information superhighway" in his State-of-the-Union Address on January 26, 1994,[19] (Event 3 on Figure 2) and the literature printed about it reached its highest point.

At this point the media's interest in the topic started to wane. A final resurgence of the literature on the topic took place on April 11, 1994, (Event 4 on Figure 2) when the President issued an executive order that required the Government Printing Office to provide electronic document delivery for government documents.

After that time, both the President and other individuals who could have been affecting the media's agenda stopped talking about the "information superhighway" as often as they used to. As the media's interest in the topic declined, even the President's remarks on the electronic superhighway on July 5, 1994, could only generate a small surge in the literature about the info-highway (see Event 5 in Figure 2).

As can be seen in Figure 2, the President's role in setting the media's agenda is probably two-fold. At times not only does the President seem to have some influence over the media's overall opinion of the importance of the info-highway, but he also seems to play a role in initiating the different stages in the growth of the literature on the topic. The results of this study also indicate that there is a possibility that the President's role changes during the different stages in the literature's growth.

During the initial growth period, a majority of the publications which were examined ignored either the topic and/or the President when he talked on the topic. The publication which lead the others in covering the issue was the New York Times. Over the course of this period, the newspapers produced about a quarter of all the words written about the info-highway. At the same time other publications like US News & World Report virtually did not report on the issue at all. The quantity of material which the New York Times and the Los Angeles Times published dominated all the other literature which was produced and was the primary contributor to both of the significant positive correlations which appeared on Table 5 (in Column T_1 with no time lag and in Column T_3 with two-weeks time lag).

In the high activity period, the President's role in putting the info-superhighway on the media's agenda changed. The New York Times no longer followed his every action, instead USA Today used him as a reference point and would often publish articles about the "information superhighway" four weeks after he mentioned it.

During this time period a large number of intervening events were also influencing the media's agenda and these variables eventually diminished the President's overall influence to a point where it was no longer statistically significant.

As the literature of the info-highway started to decline, the media again started to follow the President's actions more closely. By this time Al Gore had stopped giving major speeches about the info-highway, a number of congressional bills which would have effected the development of the "information superhighway" had died,[20] and the new electronic services which had been promised to the general public had not appeared. Now the New York Times', the Los Angeles Times', Time's, and US News & World Report's agenda were all following the President's agenda. However, other publications like USA Today and InfoWorld were not. Despite this apparent contradiction in the data set, the final correlation for T_3 was still highly significant, though the media now lagged two weeks behind the President. If USA Today's agenda had not conflicted with the agenda of the other publications chosen for this study this correlation would probably have been even stronger.

Besides the previously identified intervening events which appear to be influencing the media's agenda (especially in T_2), problems with the sample itself could have affected the study's results. An important source of error in this study was the Nexis™ databases which were used as a source for The New York Times, the Los Angeles Times, USA Today, Time, U.S. News and World Report, InfoWorld, and Computer World. Errors within the individual database of each publication and inconsistencies between different databases could have created anomalies in the data which would have affected this study's results. Errors within a single database which were encountered while coding the data for the individual publications included duplicate citations[21], citations with different word counts[22], multiple articles listed under a single citation number[23], miss-hits[24], and the occasional skipping of a citation number by Nexis'™ computer.

Inconsistencies between the different publication's databases also decreased the reliability of the study. Some publications included calendars of superhighway related events in their databases[25], and others did not. Some databases such as the New York Times' and the Los Angeles Times' databases included captions for photographs and cartoons as separate citation items within the database; others like US News & World Report's database did not. USA Today had its front page news summaries listed separately from the stories which they referred to, while publications like the New York Times included its summaries as part of its larger news stories.

The choice of publications for the study also affected the results. The study's inability to find significant standard errors of difference between the correlation coefficients of different media types may have been the result of not choosing heterogeneous pairs of publications to represent a single publication type. For example, the New York Times and the Los Angeles Times probably should not have been compared with USA Today and grouped with it. Though all three were regional or national newspapers with high circulation numbers, their content tends to be very different. The New York Times is a daily newspaper with special Saturday and Sunday issues and the Los Angeles Times is a very thick newspaper which specifically caters to a region of the country that has a vested interested in new technologies, while USA Today is a relatively thin paper which only publishes five issues per week. Because of these differences one should not expect the number of words published in all three of these newspapers on the "information superhighway" to be the same.

Another factor that limited which publications could be chosen from the Nexis™ was what was included in the publication's database. For instance, the databases of some publications only contained selected articles from the publication. If Newsweek, a publication which allowed only some of its articles to appear on-line, had been chosen, the criteria used to determine which articles appeared on-line may have biased the study.[26] However, by avoiding publications which did not post their entire contents on-line the study itself may have been biased.

As a result of this study's findings, it is recommended that additional studies be undertaken to find out how the President influences the media's agenda, and the role the President plays in the establishing the life cycle of a media topic. Future studies should try to find other measures of the President's agenda other than the Weekly Compilation of Presidential Documents, need to take into account the fact that large newspapers like the New York Times and the Los Angeles Times could dominate their data set, and should focus on the life cycles of media events other than the "information superhighway".

END NOTES

[1] Since both the White House staff and Vice President Al Gore work for President Clinton, their ability to influence the media will be considered to be part of President Clinton's ability to influence the media by helping create documents which appear in the Weekly Compilation of Presidential Documents will be considered to be part of President Clinton's ability to influence the media.

[2] In September 1993, the President released a document known as The National Information Infrastructure: Agenda for Action. Since then both the President and Vice President Gore have spoken numerous times on both the NII and the development of the Internet into the "information superhighway."

[3] The governing bodies which were forced to act on this new agenda item included Congress, the FCC, and the FTC.

[4] This document which is produced by the White House contains all the public statements and documents produced by the President during the course of a particular week (Wanta, 1992).

[5] It should be noted that the term "information superhighway" is used to describe everything from 500-channel cable systems to the meshing of telecommunication's networks and wireless communication systems.

[6] For example, this researcher has had an Internet sign-on since 1984 and has not seen a substantial change in its functionality since that time.

[7] Many newspapers produce special feature sections for their newspapers on specific days of the week. For example, most papers produce a special entertainment of "Weekend" section of their newspapers on Friday in preparation for the weekend. Since different special sections will emphasize different areas of interest, the only way to make the samples of newspaper content equivalent is to include all the special sections in an individual sample unit.

[8] Byte was originally included in the survey; however, since it is only published on a monthly magazine it was not used in the final statistical analysis.

[9] All of these publications were selected because they had a large circulation and because Nexis™ indexes their full text. It should be noted that Nexis™ only includes the selected full text of most of its newsmagazines and computer trade magazines. If a title which was selectively indexed was chosen the results of an analysis of the title would measure not only the number of articles the magazine published on the topic, but also the gatekeeping process which the indexer employed to select the articles which were to be included in the Nexis™ database.

[10] The search string used to locate Nexis™ articles was "(information and superhighway) or information highway or data highway or (electronic and superhighway) or national information infrastructure or (data and superhighway) or electronic highway or info-highway or info-superhighway."

[11] In order to be included in this study, the title of the article had to deal with the "information superhighway," and a major portion of the article had to involve telecommunications (the telephone industry), the cable industry, or be in some way related to computers.

[12] In order to be included in this study the full text of the article not only had to prominently deal with the "information superhighway" (anecdotal references were discarded), but it also had to involve telecommunications (the telephone industry), the cable industry, or be in some way related to computers.

[13] Comics, blurbs, and captions to illustrations were included in this study.

[14] Because of the wide variety of subjects addressed by the articles which mentioned the "information superhighway," it was not possible to specifically count the number of times the "information superhighway" was mentioned in an article. For instance one author would consider terms like "Internet" to be synonymous with the "information superhighway" while another would not. Coding according to the internal definitions of the articles' authors would have been at best unreliable.

[15] The material which appeared in the Weekly Compilation of Presidential Documents was diverse and included the full text of all of President Clinton's speeches, declarations, radio addresses, the President's State of the Union addresses, and transcripts of televised interviews with Larry King.

[16] The entire time period which was examined was from January 18, 1993, through September 25, 1994.

[17] Past studies have already determined that media, which are having their agenda set by an external force may lag from one week to six months behind the force which is setting its agenda (Tipton, Haney & Baseheart, 1975; Shoemaker, Wanta & Legget, 1989). Because of the amount of activity surrounding the "information superhighway," four different time lags were examined: no time lag, two-weeks time lag, four-weeks lag, six-weeks lag, and eight-week time lag. Since no significant correlation coefficients appeared for either the six-weeks lag or the eight-weeks lag they were not included in this study's results.

[18] Table 4 shows that USA Today significantly correlated with the Weekly Compilation of Presidential Documents for both a two-week and a four-week time lag; however, the correlation for the four-week was slightly greater.

[19] Wanta, Stephenson, Turk, and McCombs (1989) have already established the importance of the President's State of the Union address in setting the media's agenda.

[20] One of the bills that died at this time was Senate bill S. 1822, which would have permitted telephone and cable companies to compete with each other and would also have allowed broadcasters to market additional digital services.

[21] A duplicate citation is a citation which appears more than once in exactly the same form.

[22] Citations with different word counts are duplicate citations which appeared in a single database, but which have different word counts. Usually one citation's word count is significantly higher than the other's.

[23] Sometimes two or more different articles were loaded into the database as a single item. When this happens, the two articles often run together and can easily be counted as only one article.

[24] A miss-hit is a citation which appears in the data, but is not actually about the "information superhighway" or only mentions it in passing.

[25] When calendars were identified as "calendars of events," they were excluded from this study.

[26] Most of the specialized computer magazines including PC World and MacWorld only had selected articles appear on-line. If every article which appeared in these periodicals had been available, it is possible that a different set of seven publications would have been chosen for this study.

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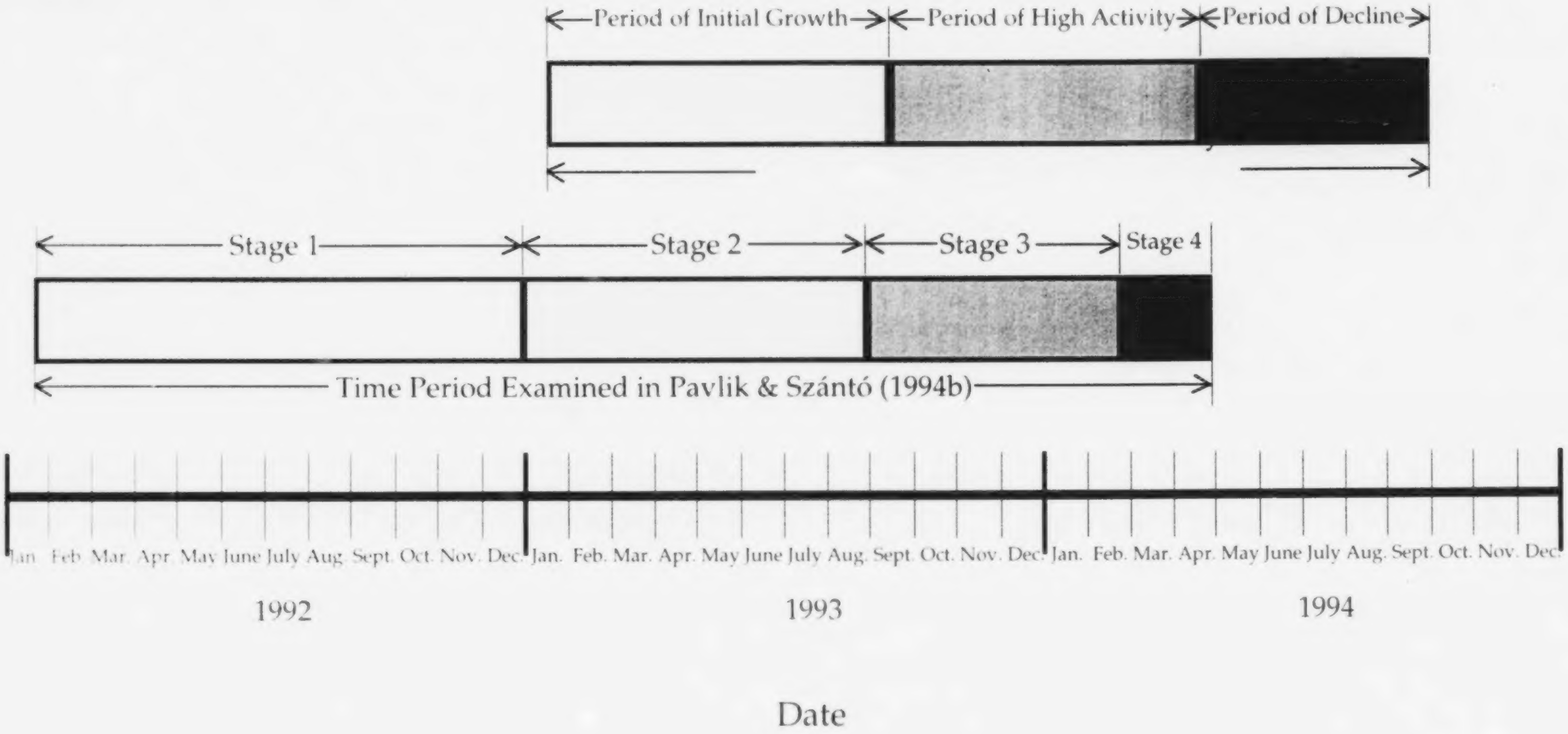
Figure 1. Time Line Comparing the Time Period Studied by Pavlik and Szántó (1994b) in their Bibliometric Study of Literature on the "Information Superhighway" and the Time Period Examined in this Study.



Period of Initial Growth
Period of High Activity
Period of Decline
Stage 1
Stage 2
Stage 3
Stage 4
Time Period Examined in Pavlik & Szántó (1994b)
Jan. Feb. Mar. Apr. May June July Aug. Sept. Oct. Nov. Dec.
Jan. Feb. Mar. Apr. May June July Aug. Sept. Oct. Nov. Dec.
Jan. Feb. Mar. Apr. May June July Aug. Sept. Oct. Nov. Dec.
1992
1993
1994
Date

Table 1. Means and Standard Deviations for the Number of Words which Appeared in Articles on the "Information Superhighway" in the Weekly Compilation of Presidental Documents, the New York Times, the Los Angeles Times, USA Today, Time, US News & World Reports, Computer World, and InfoWorld.

Publications	Mean Number of Words Per Two-Week Period	Std. Deviation	Mean Number of Words in 1 Issue of the Publication	Std. Deviation	N*
Weekly Compilation of Presidential Documents	1,428.45	2,198.32	730.84**	2,944.27	44
New York Times	9,273.05	6,212.44	662.41	523.39	44
Los Angles Times	11,135.11	8,796.64	795.37	628.33	44
USA Today	3,716.91	3,062.62	371.16	379.76	44
Time	1,648.98	1,760.36	407.61	645.18	44
US News & World Report	1,243.96	1,934.10	307.49	634.35	44
Computer World	2,534.05	2,156.21	634.70	671.67	44
InfoWorld	1,810.30	1,596.15	492.99	658.58	44

*N=A two-week period starting on Monday and ending on Sunday which took place in equal intervals starting on January 18, 1993, and ending September 25, 1994.

**For the Weekly Compilation of Presidential Documents this is the average number of words per week.

Table 2. Means and Standard Deviations for the Number of Words which Appeared in Articles about the "Information Superhighway" in Newspapers, News Magazines, and Specialized Computer Magazines.

Publication Type	Mean Number of Words per 2 Week Period	Std. Dev.	Mean Number of Words in 1 Issue of Publication of this Type.	Standard Deviation	N*
Newspapers	24,125.07	15,607.60	634.87	506.51	44
News Magazines	2,892.93	2,705.63	1,279.63	462.46	44
Spec. Computer Magazines	4,344.35	3,092.26	563.85	480.26	44

*N=A two-week period starting on Monday and ending on Sunday which took place in equal intervals starting on January 18, 1993, and ending September 25, 1994.

Table 3. Pearson Correlation Coefficients Between the Number of Words in Publications with the Number of Words in the Weekly Compilation of Presidential Documents, for Different Time Lags.[a]

Time Lags	NYT	Los Angles Times	USA Today	Time	US News...	Comp. W.	InfoWorld
for The Weekly Compilation of Pres. Docs. No Time Lag	.21	.23	.16	.15	.02	.05	.12
2 Weeks Lag	.02	**.37***	**.32***	-.10	**.30***	.00	-.05
4 Weeks Lag	.20	.04	.14	**.28***	-.05	.07	-.02

[a] The sample included 88 weeks divided into 44 two-week long time periods. All weeks between January 18, 1993, and September 25, 1994, were included in this study. N=44.

***p<.05**

Figure 2. Number of Words Published by Medium Type. Plotted According to Biweekly Totals.

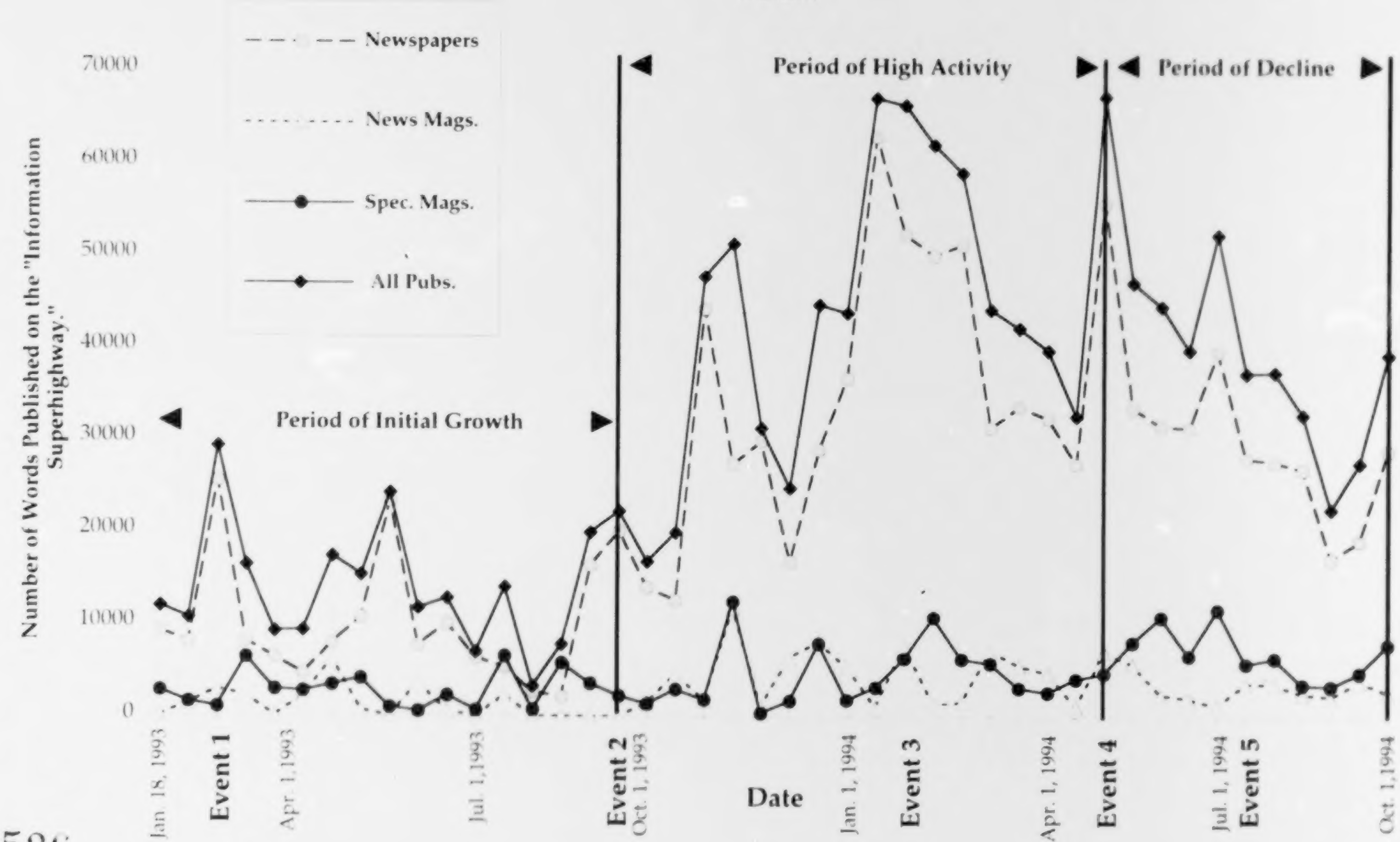


Table 4. Pearson Correlation Coefficients for the Number of Words which Appeared in Articles about the "Information Superhighway" for Specific Publications by Title with the Weekly Compilation of Presidential Documents Subdivided by Time Period for Different Time Lags

Time Lags	NYT			USA Today			Time			US News...			Comp. W.			InfoWorld		
Weekly Compilation of Pres. Docs.	T_1^a	T_2^b	T_3^c	T_1^a	T_2^b	T_3^c	T_1^a	T_2^b	T_3^c	T_1^a	T_2^b	T_3^c	T_1^a	T_2^b	T_3^c	T_1^a	T_2^b	T_3^c
No Time Lag	**.68***	.23	-.32	-.16	.11	.20	.21	.14	.05	-.12	.11	-.23	-.24	.33	-.24	.26	.39	-.10
2 Weeks Lag	-.10	-.02	-.08	-.34	**.51***	.33	-.28	.07	-.30	.19	-.06	**.82****	.30	-.06	.17	.09	.24	.17
4 Weeks Lag	-.20	.10	**.65***	-.23	**.52***	**-.60***	-.24	.36	**.65***	**.55***	-.06	-.29	.11	-.12	.22	-.09	.13	-.45

[a] Time period #1 is defined as the period of initial growth. It includes 32 weeks divided into 2-week periods which took place from January 18, 1993, through September 12, 1993.

[b] Time period #2 is defined as the period of hihgh activity. It includes 30 weeks divided into 2-week periods which took place from September 13, 1993, through April 24, 1994.

[c] Time period #3 is defined as the period of decline. It includes 22 weeks divided into 2-week periods which took place from April 25, 1993, through September 25, 1994.

***p<.05**
****p<.01**

Table 5. Pearson Correlation Coefficients for the Total Number of Words about the "Information Superhighway which Appeared in All Publications with the Weekly Compilation of Presidential Documents for Different Time Lags for the Weekly Compilation of Presidential Documents.

Time Lags	**Total Word Count for Newspapers and News Mags. Examined.**		
for **The Weekly Compilation of Pres. Docs.**	T_1[a]	T_2[b]	T_3[c]
No Time Lag	**.53***	.34	-.12
2 Weeks Lag	-.26	.18	**.80****
4 Weeks Lag	-.23	.26	.07

[a] Time period #1 is defined as the period of initial growth. It includes 32 weeks divided into 2-week periods which took place from January 18, 1993, through September 12, 1993. N=16.

[b] Time period #2 is defined as the period of high activity. It includes 30 weeks divided into 2-week periods which took place from September 13, 1993, through April 24, 1994. N=15.

[c] Time period #3 is defined as the period of decline. It includes 22 weeks divided into 2-week periods which took place from April 25, 1993, through September 25, 1994. N=11 with no time lag, and N=13 with 4 weeks time lag.

***p<.05**
****p<.01**

Table 6. Pearson Correlation Coefficients for Publications by Medium Type with the Weekly Compilation of Presidential Documents with Different Time Lags for the Weekly Compilation of Presidential Documents.[a]

Variables	**Newspapers**	**News Magazines**	**Specialized Computer Magazine**
Weekly Compilation of Pres. Docs.			
No Time Lag	.22	.11	-.08
2 Weeks Lag	.13	.16	.09
4 Weeks Lag	.20	.15	.04
Newspapers	-----	**.28***[b]	**.27***[d]
News Magazines		-----	.16[c]
Specialized Computer Magazines			-----

***p<.05**

[a] Time period #1 includes 88 weeks divided into 2-week periods which took place from Jan. 18, 1993 through Sept. 25, 1994.

[b] Standard error of difference between pearson correlation coefficients for newspapers and news magazines was not significant.

[c] Standard error of difference between pearson correlation coefficients for news magazines and specialized computer magazines was not significant.

[d] Standard error of difference between pearson correlation coefficients for specialized computer magazines and newspapers was not significant.

Reconsidering the Theoretical Linkage between Risk Communication and Relative Personal Invulnerability: A Path Analysis

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Reconsidering The Theoretical Linkage between Risk Communication and Relative Personal Invulnerability: A Path Analysis

Abstract

This study proposes a causal model to re-examine the theoretical linkage between risk communication behaviors and people's perceptions of relative personal invulnerability. While previous studies indicate that relative personal invulnerability is a kind of "unrealistic optimism" that may endanger a person's safety in a crisis situation, this study suggests that relative personal invulnerability is not necessarily reflecting people's ignorance of risk warnings; sometimes, it could be an indirect effect of risk communication behaviors.

Reconsidering The Theoretical Linkage between Risk Communication and Relative Personal Invulnerability: A Path Analysis

INTRODUCTION

This study proposes a causal model to re-examine the theoretical linkage between risk communication behaviors and people's perceptions of relative personal invulnerability. While some researchers believe that relative personal invulnerability is a kind of "unrealistic optimism" that could make the individual pay no attention to risk-related information and thus might endanger his/her safety in a crisis situation(Larwood, 1978; Weinstein, 1983), this study argues that relative personal invulnerability is not necessarily reflecting people's ignorance of risk warnings; sometimes, it could be an indirect effect of risk communication behaviors.

The causal model suggests that when people are threatened by a serious risk, those who are more concerned about the risk and those who consider the risk warning as quite convincing will look for more information about the risk from media and interpersonal channels. The risk communication behaviors will then create some communication effects, such as increasing the individual's perceived self-expertise about the risk and enhancing his/her perception of the risk controllability. Finally, these communication effects will directly lead to the perception of relative personal invulnerability.

The research questions raised in this study are:

Q1: When people are threatened by an extremely serious risk, could their beliefs in relative personal invulnerability result from attending to risk information carried by mass media and interpersonal sources?

Q2: If the answer of this question is positive, what considerations could lead people to look for the risk information from the media and interpersonal channels?

Q3: Would the risk communication behaviors create some effects such as increasing the individual's perceived self-expertise about the risk and enhancing the perceived controllability of the situation? And, would these risk communication effects consequently lead to the individual's belief in relative personal invulnerability?

The risk event investigated in this study is the earthquake prediction made by Dr. Iben Browning, a self-proclaimed climatologist from New Mexico. In November 1989, Dr. Browning predicted in public that a major earthquake of Richter 6.5 to 7.5 magnitude would attack the New Madrid Fault around December 3, 1990. The New Madrid Fault is a geographic area stretching from Charleston, Missouri, and Cairo, Illinois, through New Madrid and Caruthersville to Bllytheville and down to Marked Tree, Arkansas. According to the Center For Earthquake Studies at Southeast Missouri State University(Stewart, 1990), the Fault is active.

Dr. Browning, a Ph.D. in zoology and a business consultant for most of his career, made his earthquake prediction on the basis of a proposed theoretical linkage between tidal forces and earthquakes. Because some of the local media in the New Madrid Fault area indicated that Dr. Browning had successfully predicted the San Francisco earthquake of October 17, 1989, and a minor earthquake happened to attack the New Madrid Fault region on September 26, 1990, two months before the predicted date of the major New Madrid earthquake, the earthquake problem became an important issue covered by the mass media in the New Madrid area while December 3, 1990 approached.

LITERATURE REVIEW

During the past three decades, researchers have found that people tend to believe that others had greater chances to be hurt by negative events than do themselves(e.g., Drake, 1984; Kirscht, Haefner, Kegeles, & Rosenstock, 1996; Larwood, 1978; Perloff, 1983; Perloff & Fetzer, 1986; Robertson, 1976, 1977; Svenson, 1981; Weinstein, 1980, 1983, 1984, 1987a; Weinstein & Lachendro, 1982; Zakay, 1984). For example, people believe that they are more skillful and less risky than an average driver (Slovic, Fischhoff, & Lichtenstein, 1978; Svenson, 1981). They also believe that they have fewer chances to be fired from a job, to divorce or to attempt a suicide, or to suffer from such health problems as heart attack, cancer, gum disease, and venereal diseases than does the average person(Kirscht, Haefner, Kegeles, & Rosenstock, 1966; Perloff & Fetzer, 1986; Weinstein, 1980).

Prior research on mass media's impersonal impact on people's risk perceptions also demonstrate that when people attend to messages related to social and natural hazards, they tend to recognize the risk at the social level but not at the personal level(Comstock, 1982; Hawkins, & Pingree, 1982; Tyler, 1980, 1984; Tyler & Cook, 1984). In other words, while people recognize that the society is threatened by a risk, they are still confident of their personal invulnerability. Thus, as Sandman, Weinstein and Klotz(1987) note, "it is not easy to get people to acknowledge their vulnerability" (p.101). Sandman and associates (1987) also indicate that when people are threatened by a natural disaster, a common response is apathy. Sandman, Weinstein, and Klotz(1987) consider this apathy an unrealistic response to risk warnings and thus suggest: "most individuals in the at-risk area need to be prodded in the direction of rational concern" (p.104).

However, on the other hand, some other evidence seems to suggest that people are not to so unrealistic and irrational in dealing with the threats of hazards. For example, Hawkes, Stiles, and Acredolo(1984) investigate people's reacting to the risk resulting from the use of a chemical pesticide in the 1981-82 Mediterranean fruitfly eradication campaign in the San Francisco Bay Area. The results show that while about two-thirds of the respondents indicate that the spray contains slight or no risk to humans and to the environment, 94 percent of the total sample take at least one precaution. According to Hawkes et al.'s(1984) descriptions, the precautions are recommended through the media and distributed flyers, and most precautions can be easily carried out by the residents.

An interesting question raised by Hawkes et al.'s (1984) study is that why do people who consider themselves invulnerable to the risk adopt precautionary strategies recommended by the media and other campaign sources? Hawkes and associates(1984) explain that "this could be due to the assumption by respondents that the protective measures available would be sufficient to neutralize the risk."(p.447). In other words, people's beliefs in relative personal invulnerability could be a psychological product of their adoption of precautions instead of just being an unrealistic optimism about personal safety.

Some researchers have also suggested that people will not always ignore the recommendations of precaution carried by the media and other information sources, such as the individual's interpersonal communication partners (Janis & Mann, 1977; Tyler & Cook, 1984; Weinstein, 1985).

As Dolinski, Gromski, and Zawisza(1987) indicate, when people encounter immediate and severe threats, they may "look for information about the threat that enables them to diagnose the situation and take appropriate precautions" (p.515). What have not been investigated is that whether this risk communication could enhance people's sense of mastery over the situation and thus lead them to perceive themselves as less vulnerable to the risk than most other individuals. This question is important to the study of relative personal invulnerability because it proposes a reconsideration of the theoretical linkage between relative personal invulnerability and risk communication.

According to the traditional perspectives, relative personal invulnerability is an intuitive self-defensive reaction to the risk. This belief will lead people to ignore the information about self-precautions disseminated by the media and other sources. A different perspective suggested in this study is that relative personal invulnerability is not necessarily an intuitive response to the risk; rather, it could result from the exposure to risk information concerning precautionary strategies. In other words, people believe that they are safer than most other persons because they think they have learned a lot about self-protection from the media and interpersonal networks.

Based on the preceding discussion, this study proposes a causal model to explain why the belief in relative personal invulnerability could be a function of risk communication.

Figure 1 presents a proposed causal model of relative personal invulnerability. The theoretical definitions of the variables are presented in Table 1. Based on the perspectives of media dependency theory (DeFleur & Ball-Rokeach, 1989) and the theory of people's reactions to victimization(Janoff-Bulman & Frieze, 1983; Taylor, 1983), the model suggests that if the individual has a relatively greater involvement with the risk and considered the threat of the risk as quite convincing, he/she will look for risk information from newspapers, television, and interpersonal communication channels. These communication behaviors would then increase the individual's perceived self-expertise about the risk and enhance the perceived controllability of the risk. Finally, the increased sense of mastery will lead the person to believe that he/she will be less vulnerable to the risk than most others.

In addition, based on the traditional perspective of relative personal invulnerability(Larwood, 1978; Robertson, 1976, 1977; Svenson, 1981; Weinstein, 1980, 1984, 1987a), the model also proposes that having less concern about the risk and considering the threat of the risk as less convincing could also directly lead people to perceive themselves as safer than most other individuals. In this case, the individual's perception of relative personal invulnerability could be reflecting an underestimation of the risk and an overestimation of the person's ability to avoid victimization.

Research Hypotheses

(1)Basic Hypothesis:

The ultimate dependent variable in this study is relative personal invulnerability. This variable is conceptualized as extent to which the individual believes that he/she will have fewer chances to be killed or injured by a risk than will most others. Considering that many previous studies have found that people had a general tendency to perceive themselves as less vulnerable to various negative events than the average person or most other individuals (e.g., Drake, 1984; Kirscht, Haefner, Kegeles, & Rosenstock, 1966; Larwood, 1978; Perloff, 1983; Perloff & Fetzer, 1986; Robertson, 1976, 1977; Svenson, 1981; Weinstein, 1980, 1983, 1984, 1987a; Weinstein &

Lachendro, 1982; Zakay, 1984), this study raises a basic hypothesis as:

> H1: The mean score of people's estimations of other's chances of being killed or injured by a predicted major earthquake will be significantly greater than the mean score of their estimations of their own chances of being killed or injured by an earthquake.

(2)Involvement and Risk Communication

As Figure 1 shows, involvement with a risk has an indirect effect on relative personal invulnerability through risk communication. In the current study, involvement with the risk is defined as the extent to with the individual is concerned about the risk. As a critical concept in many communication studies, involvement has been suggested as a "motivational state to seek and process information"(Salmon, 1986, p.261). DeFleur and Ball-Rokeach (1989) suggest that survival and growth are two basic motivations for people to monitor their environment and to get orientations and relaxations. Because mass media controlled the resource of information gathering, information processing, and information dissemination, people sometimes have to rely on the media to achieve the personal goals. Thus, the stronger the motivations to achieve the goals, the greater the involvement in processing the media's information. Salmon(1986) also maintains that involvement is a function of the interaction between personal goals and a stimulus. And the level of involvement will influence the way in which the information is processed by the individual(p.262).

Petty and associates(1983; 1988) suggest that when individuals are faced with a high-involvement issue, that is, an issue that has a direct personal relevance or a significant consequence on individuals, they will tend to "exert the cognitive effort required to evaluate the issue-relevant arguments presented, and their attitudes were a function of this information-processing activity" (Petty, Cacioppo, & Schumann, 1983, p.137).

Heath and Douglas(1990) investigate the relationships between issue involvement and the extent to which individuals talk about the issue, read about it, and watch a television program about it. The results indicate that issue involvement has a significant positive correlation with the exposure to the issue-related information in the media. In addition, people tend to talk more about high-involvement issues than about low-involvement issues. Heath and Douglas(1990) explain that " as persons become more involved in an issue, they seek out additional information and so, develop more complex communication repertoires" (p.201). Grunig(1983,1987) also proposes that a relatively high-involved person will be more likely to actively seek information which "has utility for him in deciding what to do in a situation" (Grunig, 1983, p.11). Finally, some researchers maintain that interpersonal communication partners can be a source for people to look for information relevant to the issue(Clarke & Kline, 1974; Rogers, 1987; Janoff-Bulman & Frieze, 1983).

Based on the preceding discussion, the current study raises three hypotheses concerning the causal relationships between involvement and risk communication behaviors.

H2: The individual's involvement with a risk has a positive direct effect on the level of his/her reading risk-related reports in newspapers.

H3: The individual's involvement with a risk has a positive direct effect on the level of his/her viewing risk-related television programs.

H4: The individual's involvement with a risk has a positive direct effect on the extent to which he/she talks about risk with interpersonal communication partners.

(3)Risk Perception and Risk Communication

Another variable that may lead people to look for the risk-related information is the individual's risk perception. This variable is conceptualized as the extent to which a person believes that a risk is going to happen in his/her environment. Slovic and associates(1978)investigate motorists' psychological considerations in the non-use of seat belts. They find that the perceived probability of a risk is a more important predictor of the adoption of self-protective strategies than is the estimated consequences of the hazard. In general, people are disinclined to protect themselves against low-probability risks.

Dolinski, Gromski, and Zawisza (1987) maintain that people tend to intuitively deny their vulnerability to potential and incidental negative events because there is no necessity for them to worry about the events that are not likely to happen in their surroundings. However, when a risk is perceived as containing a high-probability threat, "it may be more reasonable for individuals to look for information about the threat that enables them to diagnose the situation and take appropriate precautions" (p.515). Based on these notions, this study hypothesizes that:

H5: The individual's risk perception has a positive direct effect on the level of his/her reading risk-related reports in newspapers.

H6: The individual's risk perception has a positive direct effect on the level of his/her viewing risk-related television programs.

H7: The individual's risk perception has a positive direct effect on the extent to which he/she talks about the risk with interpersonal communication partners.

(4)Risk Communication, Perceived Self-expertise about the risk, and Perceived Controllability of the risk

The three risk communication variables included in the model are: (1) reading risk-related reports in newspapers, (2)viewing risk-related television programs, and (3)talking about a risk with others. These communication activities are assumed as major approaches for the individual to obtain knowledge concerning the impact of the risk and some self-precautionary strategies. During the past two decades, many studies have indicated that increasing people's knowledge of public affairs is one of the major effects of mass communication. Researchers also suggest that mass media play an important role in providing people with necessary information to survive risks. Nigg(1982), Rattien(1980), Rogers(1987) also maintain that mass media can contribute to the mitigation of disasters by providing people with such information as the warning of the risk and some self-preventive strategies.

In addition to mass media, interpersonal communication can also increase the individual's knowledge of public affairs and enhance their perceptions of issue salience. Robinson and Levy(1986) find that people's comprehension of news events can be enhanced by interpersonal communication. When people are threatened by a risk, interpersonal communication can "play a crucial role in the diffusion of both precautions and coping behaviors" (Rogers, 1987, p.82). There was evidence indicating that people tend to seek help initially from their friends, relatives, and neighbors when bothered by some troubles(Gourash, 1978; Rogers, 1987). Other researchers point out that people tend to adopt self-precautionary strategies when relevant others consider the precautions as desirable and have decided to adopt them(Rogers, 1987; Sandman, Weinstein, & Klotz, 1987).

Based on the preceding discussion, this study hypothesizes that:

H8: Reading risk-related reports in newspapers has a positive direct effect on perceived self-expertise about the risk.

H9: Reading risk-related reports in newspapers has a positive direct effect on perceived controllability of the risk.

H10: Viewing risk-related television programs has a positive direct effect on perceived self-expertise about the risk.

H11: Viewing risk-related television programs has a positive direct effect on perceived controllability of the risk.

H12: Talking about the risk with interpersonal communication partners has a positive direct effect on perceived self-expertise about the risk.

H13: Talking about the risk with interpersonal communication partners has a positive direct effect on perceived controllability of the risk.

(5)Perceived Self-Expertise about the Risk, Perceived Controllability of the risk, and Relative Personal Invulnerability

Perceived self-expertise about the risk refers to the extent to which the individual perceives him/herself as knowing the risk. Perceived controllability of the risk refers to the extent to which the individual believes that his/her preparedness for the risk will enable him/her to survive the risk. These two variables are proposed to have positive direct effects on the individual's perception of relative personal invulnerability.

According to the theory of victims' reactions to victimization (Janoff-Bulman & Frieze, 1983; Taylor, 1983), the experience of victimization may shake the individual's belief in personal invulnerability and cause intense stress and anxiety. While nonvictims tend to believe in their personal invulnerability and perceived the world as basically controllable, meaningful and comprehensible, victims might consider themselves as quite vulnerable and have difficulties to understand why unfortunate events could happen to them.

In order to make themselves once again function effectively, some victims will make efforts to search for the meaning of the risk and to restore the sense of mastery over their lives(Janoff-Bulman & Frieze, 1983; Taylor, 1983). According to Taylor(1983), searching for meaning of the risk enables the victims to figure out the cause and the impact of the risk. Once the victims believe that they have understood why the risk could threaten them and what possible consequences the risk might have on their future lives, their anxieties and fears could be reduced. Similarly, after learning some psychological and physical methods to deal with the risk, victims may regain the confidence in the controllability of their lives and believe that they will have a better chance to survive the risk than will most other people who are threatened by the same risk(Weinstein, 1980; Zakay, 1984). Without these adaptation process, victims may not be able to restore their beliefs in relative personal invulnerability and may perceive themselves as more vulnerable than most other individuals(Perloff, 1983; Weinstein, 1980).

Based on the preceding theoretical notions, it can be proposed that for those who live in the new Madrid Zone, Dr. Browning's earthquake prediction is a serious challenge to their confidence in personal invulnerability. Among the residents in the area, those who are relatively more concerned about the earthquake problem and those who have a stronger belief in the accuracy of the prediction may be more likely to define themselves as prospective victims. This self-image may cause stress and anxiety and thus lead the individual to look for information about the meaning of the risk and about the self-precautionary measures. After acquiring the risk information from the media and interpersonal communication channels, people's beliefs in personal invulnerability are restored and the situation becomes once again controllable. This reestablished self-confidence may finally lead people to believe that even if the predicted earthquake really happened, they would still have fewer chances to be killed or injured by the disaster than would most other individuals in the same area. This discussion leads the present study to hypothesize that:

> H14: The perceived self-expertise about the risk has a positive direct effect on relative personal invulnerability.
>
> H15: The perceived controllability of the risk has a positive direct effect on relative personal invulnerability.

(6)Involvement, Risk Perception, and Relative Personal Invulnerability

Finally, based on the traditional theoretical perspective of relative personal invulnerability, the model proposes that lower levels of involvement and risk perception may directly lead to the belief in relative personal invulnerability. As some researchers suggest, when people encounter a risk, some of them may underestimate the risk and overestimate their abilities to avoid victimization (Larwood, 1978; Robertson, 1976, 1977; Svenson, 1981; Tyler & Cook, 1984; Weinstein, 1984, 1987b). Thus, it can be hypothesized that those who are less concerned about the risk and those who believe that the disaster is not likely to happen in their environment will be less worried about the situation and thus be quite confident in their relative personal invulnerability. This theoretical consideration leads to the following hypotheses:

> H16: Involvement with the risk has a negative direct effect on relative personal invulnerability, with an association

between the lower level of involvement and the higher level of relative personal invulnerability.

H17: Risk perception has a negative direct effect on relative personal invulnerability, with an association between the lower level of risk perception and the higher level of relative personal invulnerability .

METHOD

Sampling Procedure and Data Collection

Data for this study were collected in a telephone survey conducted in Cape Girardeau, Scott City, and Jackson area, Missouri during the first week of November, 1990. A total of 516 respondents completed the interviews.

The method of random digit dialing was employed in the sampling procedure. The last four digits of respondents' telephone numbers were generated randomly by a SAS computer program. These random numbers were then combined with the three-digit exchange numbers in the three Missouri communities proportionally.

The Structure of the Path Diagram

This study employs the statistical method of path analysis to test a causal model of relative personal invulnerability. According to Pedhazur(1982), path analysis is "a method for studying patterns of causation among a set of variables"(p. 577). It is actually "a form of applied multiple regression analysis that uses path diagram to guide problem conceptualization or to test complex hypothesis"(Kerlinger, 1986, p.564).

The causal model proposed in the preceding section is presented as a path diagram in Figure 2. The structure of the diagram shows that involvement with the risk and risk perception are two exogenous variables. Their relationship is illustrated by a reciprocal curvilinear path and will not be analyzed. The six endogenous variables are: (1) reading risk-related reports in newspapers, (2) viewing risk-related television programs, (3) talking about the risk with interpersonal communication partners, (4) perceived self-expertise about the risk, (5) perceived controllability of the risk, and (6) relative personal invulnerability.

The equations of this diagram are:

$X3 = P31X1 + P32 X2 + e3$
$X4 = P41X1 + P42X2 + e4$
$X5 = P51X1 + P52X2 + e5$
$X6 = P63X3 + P64X4 + P65X5 + e6$
$X7 = P73X3 + P74X4 + P75X5 + e7$
$X8 = P81X1 + P82X2 + P86X6 + P87X7 + e8$

where $X1$ = involvement with the risk;
$X2$ = risk perception;
$X3$ = read about the risk-related reports in newspapers;
$X4$ = viewing risk-related television programs;
$X5$ = talk about the risk with interpersonal communication partners;
$X6$ = perceived self-expertise about the risk;
$X7$ = perceived controllability of the risk;
$X8$ = relative personal invulnerability;
$P31$, $P32$, $P41$, $P42$, $P51$, $P52$, $P63$, $P64$, $P65$, $P73$, $P74$, $P75$, $P81$, $P82$, $P86$, $P87$ = path coefficients;
$e3$, $e4$, $e5$, $e6$, $e7$, $e8$ = residuals of endogenous variables

Measurement of Variables

Involvement with the risk is measured by two variables. Ego-involvement refers to the the extent to which the individual considers the earthquake problem an important issue for him/her. This variable is measured by asking respondents: "How important is the earthquake problem to you personally?"(4 = very important; 3 = somewhat important; 2 = not very important; 1 = not at all important) Cognitive involvement is concerned with the extent to which the individual thinks about the earthquake issue. This variable is measured by asking respondents "How often do you stop to think about a major earthquake hitting the Cape Girardeau area?"(4 = very often; 3 = sometimes; 2 = not very often; 1 = almost never) These two measures are combined to create an index of involvement with the risk. The internal consistency coefficient(Cronbach's Alpha) is .75.

Risk perception is measured by the question "How believable do you think the prediction of a major earthquake on December 3 really is"(4 = very believable; 3 = somewhat believable; 2 = not very believable; 1 = not believable at all)

Talking about the risk with interpersonal communication partners consists of three measures. First, respondents are asked "How much have you talked with members of your family about earthquake?"(4 = a lot; 3 = some; 2 = not much; 1 = not at all) Then, respondents are asked to indicate how much they have talked about earthquakes with friends and colleagues on the same scaling, respectively. The three measures are combined into an index of interpersonal communication about the earthquake issue. The internal consistency coefficient(Cronbach's Alpha) is .68.

Perceived self-expertise about the risk is measured by asking respondents "How much do you know about earthquakes?"(4 = great deal; 3 = quite a bit; 2 = not a whole lot; 1 = not much at all)

Perceived controllability of the risk consists of two measures. First, respondents are asked "How prepared do you feel you are in the event of a major earthquake?"(4 = very well prepared; 3 = somewhat prepared; 2 = not well prepared; 1 = not at all prepared) Second, respondents are asked "If you personally tried to do something to help protect yourself and your family from a major earthquake, do you think your efforts would make a lot of difference at all?"(4 = a lot of difference; 3 = some difference; 2 = not much difference; 1 = no difference at all) The two measures are combined into an index of perceived controllability of the earthquake problem. The internal consistency coefficient(Cronbach's Alpha) is .52.

The ultimate dependent variable, relative personal invulnerability, is by definition a comparative risk judgment. A three-step process is taken to operationalize this concept. First, respondents are asked to estimate the likelihood that they will be killed or injured in an earthquake. The question is "What do you think the chances are that you might be killed or injured if we had a major earthquake?"(4 = very likely; 3 = somewhat likely; 2 = not very likely; 1 = not at all likely) Then, respondents are asked to estimate the likelihood that most other people will be killed or injured in an earthquake. The question is "How about most other people? How likely is it that many other people would be killed or injured if we had a major earthquake here?"(4 = very likely; 3 = somewhat likely; 2 = not very likely; 1 = not at all likely) The final step is to subtract the measure of own chances of being killed or injured from the measure of others' chances of being killed or injured. The results of this subtraction ranges from positive three to minus three with the association between greater positive scores and stronger relative personal invulnerability to a major earthquake.

RESEARCH FINDINGS

The result of a t-test presented in Table 2 supports the basic hypothesis that people living in the New Madrid Area perceive themselves as less vulnerable to the predicted major earthquake than most other persons in the same area(t=8.61, df=515, p<.0001).

Figure 3 presented the numerical solutions to the proposed path diagram.

Hypothesis 2, 3, and 4 state that involvement with the risk have positive direct effects on the amount of risk information the individual acquire from the media and interpersonal channels. These three hypotheses are all supported(P31=.13, p<.05; p41=.16, p<.01; p51=.37, p<.01).

Hypotheses 5, 6, and 7 state that risk perception also have positive direct effects on the amount of risk information the individual acquire from the media and interpersonal channels. The results show that only one of the three hypotheses is supported. Risk perception only has a significant positive direct effect on talking about the risk with others(p52=.09, p<.05).

Hypotheses 8 and 9 state that reading risk-related reports in newspapers has positive direct effects on perceived self-expertise about the risk and on perceived controllability of the risk. The results indicate that hypothesis 8 is supported. Reading risk-related reports in newspapers has a significant positive direct effect on perceived self-expertise about the risk(P63=.19, p<.01). Hypothesis 9 is not supported. Reading risk-related reports in newspapers has no significant effect on perceived controllability of the risk at .05 level.

Hypothesis 10 and 11 state that viewing risk-related television programs has positive direct effects on perceived self-expertise about the risk and on perceived controllability of the risk. These two hypotheses are not supported by the data.

Hypotheses 12 and 13 state that talking about the risk with others has positive direct effects on perceived self-expertise about the risk and on perceived controllability of the risk. Both of these two hypotheses are supported(P65=.19, p<.01; P75=.26, p<.01).

Hypothesis 14 states that perceived self-expertise about the risk has a positive direct effect on relative personal invulnerability. This hypothesis is not supported. Hypothesis 15 states that perceived controllability of the risk has a positive effect on relative personal invulnerability. This hypothesis is supported (P87=.13, p<.05).

Hypothesis 16 states that involvement with the risk has a negative direct effect on relative personal invulnerability with an association between lower level of involvement and higher level of relative personal invulnerability. Hypothesis 17 states that risk perception has a negative direct effect on relative personal invulnerability with an association between lower level of risk perception and higher level of relative personal invulnerability. The results indicate that neither hypotheses are supported.

Among the restricted paths in the proposed model(P61, P71, P62, P72, P83, P84, and P85), P71 is the only one that is significant at .05 level(P71=.22, p<.01). In other words, the data suggest that involvement with the risk has a positive direct effect on perceived controllability of the risk.

The revision of the proposed causal model is based on the preceding numerical solutions to the proposed path diagram. The nonsignificant proposed paths are removed from the model, and the significant restricted path is included into the model. The revised causal model is presented in Figure 4 and the numerical solutions to the revised model are presented in Figure 5. A test of the goodness-of-fit of the revised causal model(see Pedhazur, 1982, p. 619) indicates that the model is not significantly divergent from the data at .05 level(Q =.98; W =4.42, df=14), thus, it can be concluded that the revised model is supported by the data quite well.

DISCUSSION

The results of the path analysis have some theoretical implications.

First, although a number of proposed causal relationships are not statistically significant, overall, the theoretical thinking underlying the proposed causal model is supported by the data. The numerical solutions to the proposed and the revised path diagrams indicate that when people encounter a highly threatening risk, greater involvement with the risk and stronger risk perception do lead the individual to look for information about the risk through mass media and interpersonal channels. And, then, such risk communication behaviors as reading risk-related reports in newspapers and talking about the risk with others do increase the individual's perceived self-expertise about the risk or enhance his/her perceived controllability of the risk. Finally, one of the proposed risk communication effects, perceived controllability of the risk, directly leads to the perception of relative personal invulnerability.

In sum, the data support the proposition that relative personal invulnerability could be a consequence of risk communication behaviors, especially the behavior of talking about the risk with others.

Second, based on some researchers' arguments that the perception of relative personal invulnerability is an "unrealistic optimism" that simply reflects people's ignorance of the risk warnings(Tyler & Cook, 1984; Weintstein, 1980, 1984, 1987b; Weintstein & Lachendro, 1982), the proposed causal model hypothesizes that relative personal invulnerability might directly result from the lower level of risk involvement and the lower level of the risk perception. Yet, the results of the path analysis show that this theoretical notion is not supported by the data. Neither involvement with the risk nor risk perception has a significant negative direct effect on relative personal invulnerability at .05 level. This finding seems to suggest that ignoring or rejecting risk warning might not be the major sources of relative personal invulnerability. Thus, it would be questionable to conclude that relative personal invulnerability is simply an optimistic bias reflecting the individual's underestimation of the risk.

Third, the revised model indicates that perceived controllability of the risk was the only independent variable that has a significant direct effect on relative personal invulnerability. The revised model also shows that any other independent variable would not be able to have an indirect effect on the ultimate dependent variable unless it has a direct or an indirect effect on perceived controllability of the risk. Thus, it appears that the extent to which people perceive the risk as controllable is the most critical factor on their comparative risk judgments.

Fourth, in contrast with the significant role perceived controllability plays in the revised model, perceived self-expertise about the risk has no impact on relative personal invulnerability. It appears that being more knowledgeable about risk is not enough for the individual to make optimistic risk judgment. To be confident in relative personal invulnerability, people have to perceive the risk as controllable to a certain extent.

Fifth, among the three communication variables, talking about the risk could indirectly increase people's confidence in relative personal invulnerability by directly increasing the individual's perceived controllability of the risk. The revised model also indicates that talking about the risk is the only communication variable that has significant positive direct effects on both perceived self-expertise about the risk and perceived controllability of the risk. These findings are parallel to some scholars' arguments that interpersonal communication plays an important role in providing people with the orientation to cope with a risk.

Sixth, reading risk-related reports in newspapers and viewing risk-related television programs have no impact on relative personal invulnerability. It was because these two communication variables have no significant direct effect on perceived controllability of the risk. As mentioned above, if an independent variable had no significant effect on perceived controllability of the risk, it could not be able to have any influence on the ultimate dependent variable.

Finally, based on the research findings of this study, the researcher would like to make two suggestions for future studies on relative personal invulnerability:

First, this study is just a groundwork for theory construction of the relationship between risk communication behaviors and the perception of relative personal invulnerability. Researchers may collect another data set and cross validate the numerical solutions to the proposed path diagram of the present study. In the replications, some other risk events could be selected, and some variables could be measured in different ways. For example, instead of asking the respondents such a general question as "How much information about the earthquake issue have you obtained from the newspaper(or from television)?", researchers could measure the mass communication variables by asking respondents a more specific question as "How much information about the self-precautionary strategies have you obtained from the newspaper(or from television)?" Being measured in this way, the newspaper and television variables might show significant positive direct effects on perceived controllability of the risk and thus have some indirect effects on relative personal invulnerability.

Second, the frequency distribution of relative personal invulnerability suggests that there are actually three kinds of comparative risk judgments made by the respondents. They are:(1)relative personal invulnerability, a perception such as "I believe that my chances of being killed or injured by a risk would be fewer than that of most others." (2)relative personal vulnerability, a perception such as "I believe that my chances of being killed or injured by a risk would be greater than that of most others." and (3)consensus of vulnerability, a perception as "I believe that my chances of being killed or injured by the risk would be the same as that of most others." Future studies may apply the statistical method of discriminant analysis to examine how relative personal invulnerability could be distinguished from the other two perceptions by such variables as risk involvement, risk perception, attending to risk-related information carried by media and interpersonal channels, perceived self-expertise about the risk, and perceived controllability of the risk. This kind of study may allow researchers to learn more about relative personal invulnerability by comparing the characteristics of the three different comparative risk judgments.

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TABLE 1

Theoretical Definitions Of Variables

Variables	Theoretical Definitions
Involvement with the risk	--The extent to which the individual is concerned about the risk.
Risk perception	--The extent to which the individual believes that a risk is going to happen in his/her environment.
Read about the risk in newspapers	--The extent to which the individual attends to risk-related information in newspapers.
Viewing risk-related television programs	--The extent to which the individual watches risk-related programs on television.
Talk about the risk with interperpersonal communication partners	--The extent to which the individual discusses the risk with others.
Perceived self-expertise about the risk	--The extent to which the individual perceives him/herself as knowing the risk.
Perceived controllability of the risk	--The extent to which the individual believes that his/her preparedness for the risk will enable him/her to survive the risk.
Relative personal invulnerability	--The extent to which the individual believes that he/she will be safer than most others will be.

TABLE 2

The Difference Between The Mean Score Of People's Eestamations Of Their Own Chances Of Being Killed Or Injured By A Major Earthquake And The Mean Score Of Their Estimations Of Most Others' Chances Of Being Killed Or Injured By The Earthquake (df=515)

Variable	Mean	Standard Deviation	t-Value
Perceived others' chances of being killed or injured by the earthquake	2.81	.73	8.61**
Perceived own chances of being killed or injured by the earthquake	2.49	.80	

** p<.001

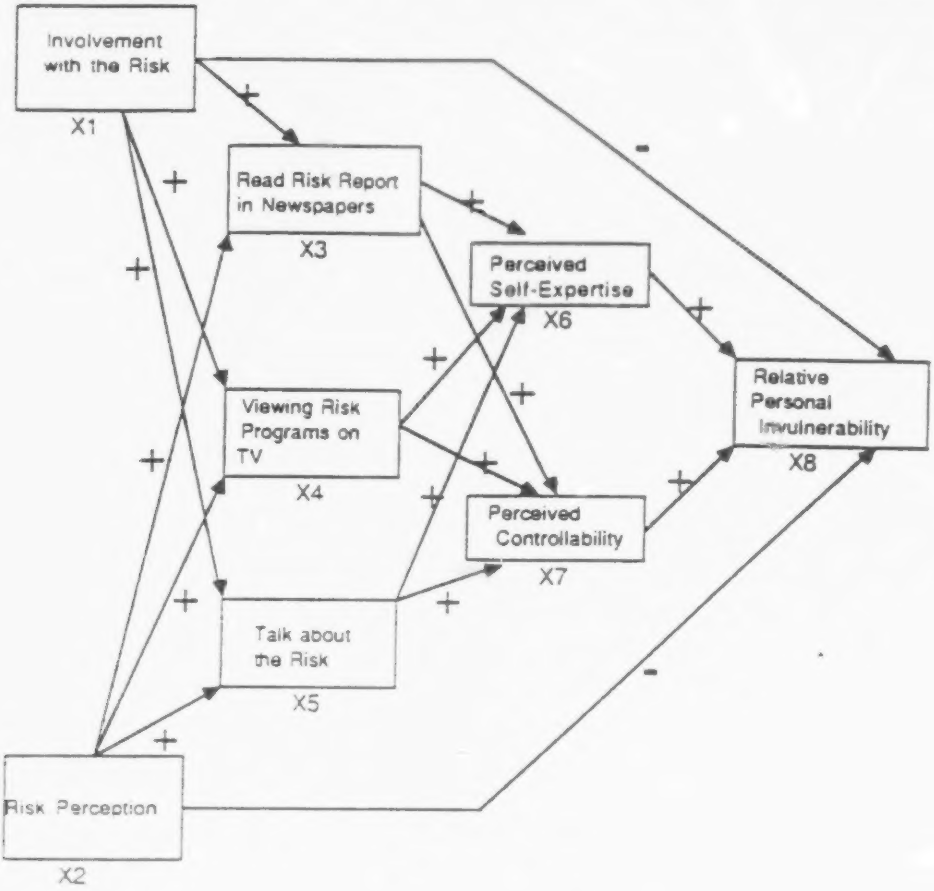

Involvement with the Risk
X1
Risk Perception
X2
Read Risk Report in Newspapers
X3
Viewing Risk Programs on TV
X4
Talk about the Risk
X5
Perceived Self-Expertise
X6
Perceived Controllability
X7
Relative Personal Invulnerability
X8
+
+
+
+
+
+
+
+
+
+
+
+
+
+
-
-

Figure 1. A Proposed Causal Model of Relative Personal Invulnerability

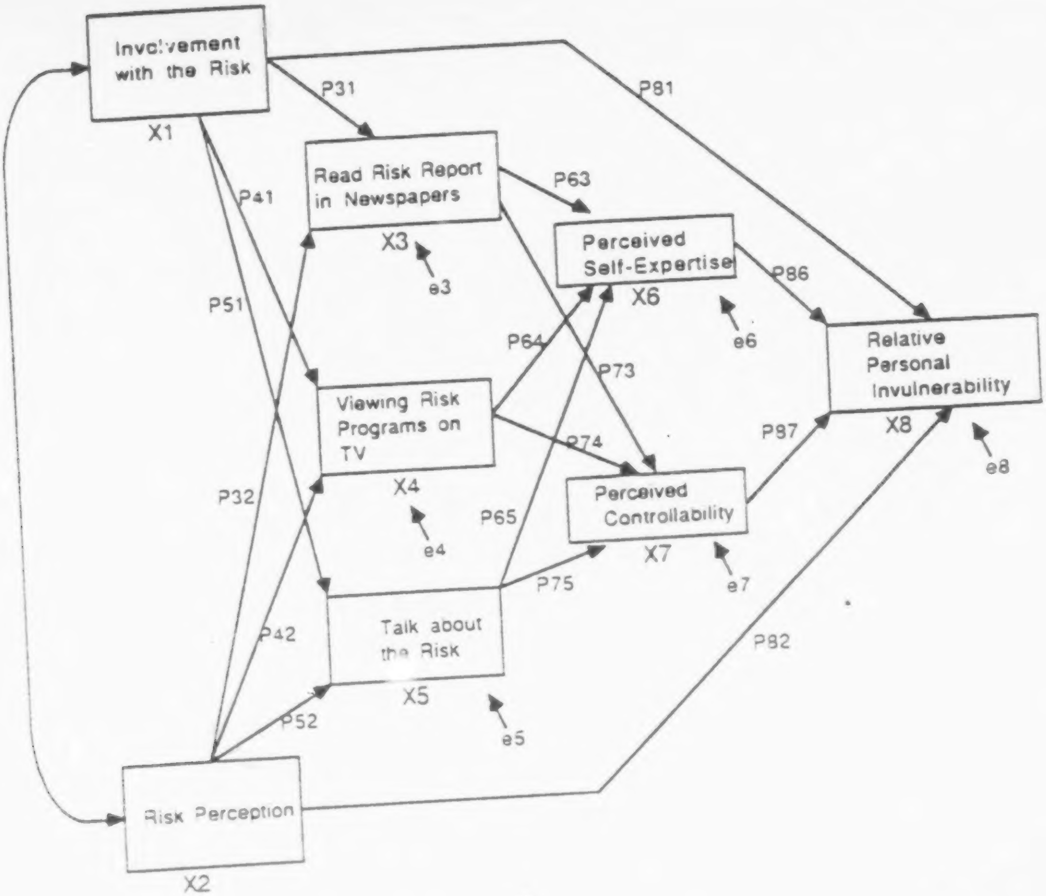

Involvement with the Risk
X1
Risk Perception
X2
Read Risk Report in Newspapers
X3
e3
Viewing Risk Programs on TV
X4
e4
Talk about the Risk
X5
e5
Perceived Self-Expertise
X6
e6
Perceived Controllability
X7
e7
Relative Personal Invulnerability
X8
e8
P31
P41
P51
P81
P63
P64
P65
P73
P74
P75
P86
P87
P32
P42
P52
P82

Figure 2. A Path Diagram of the Proposed Causal Model

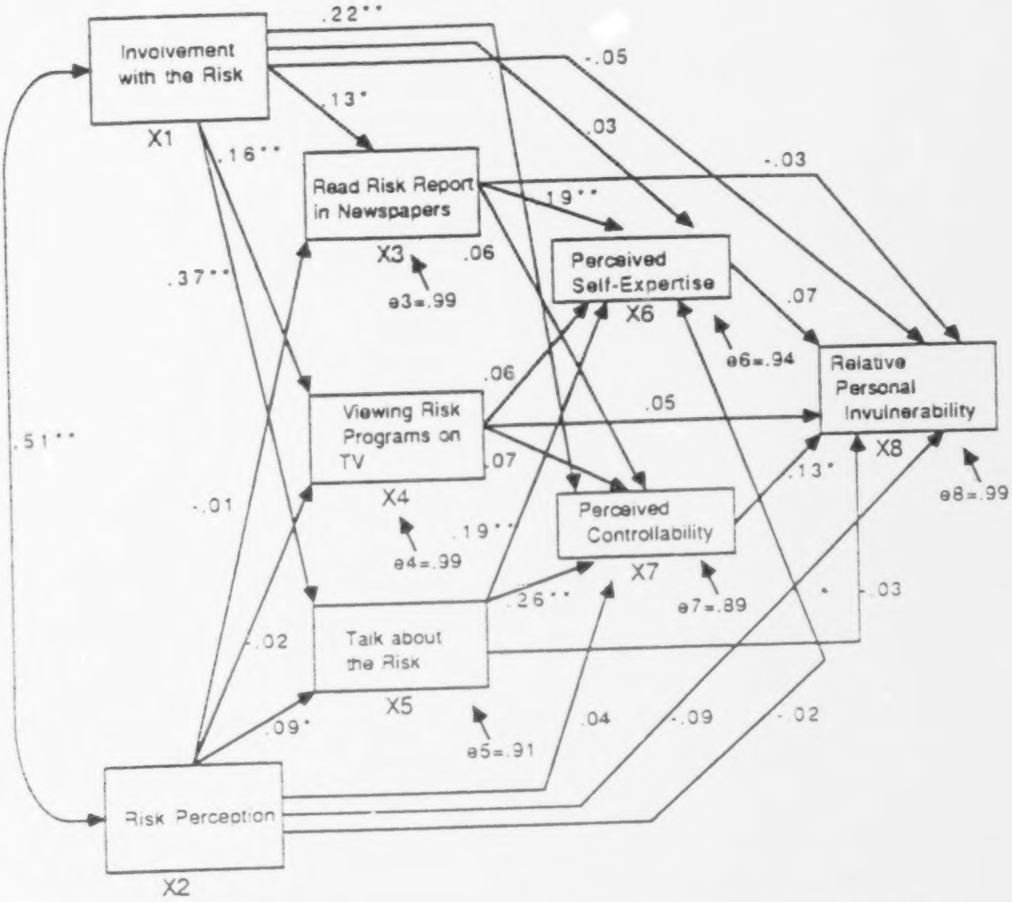
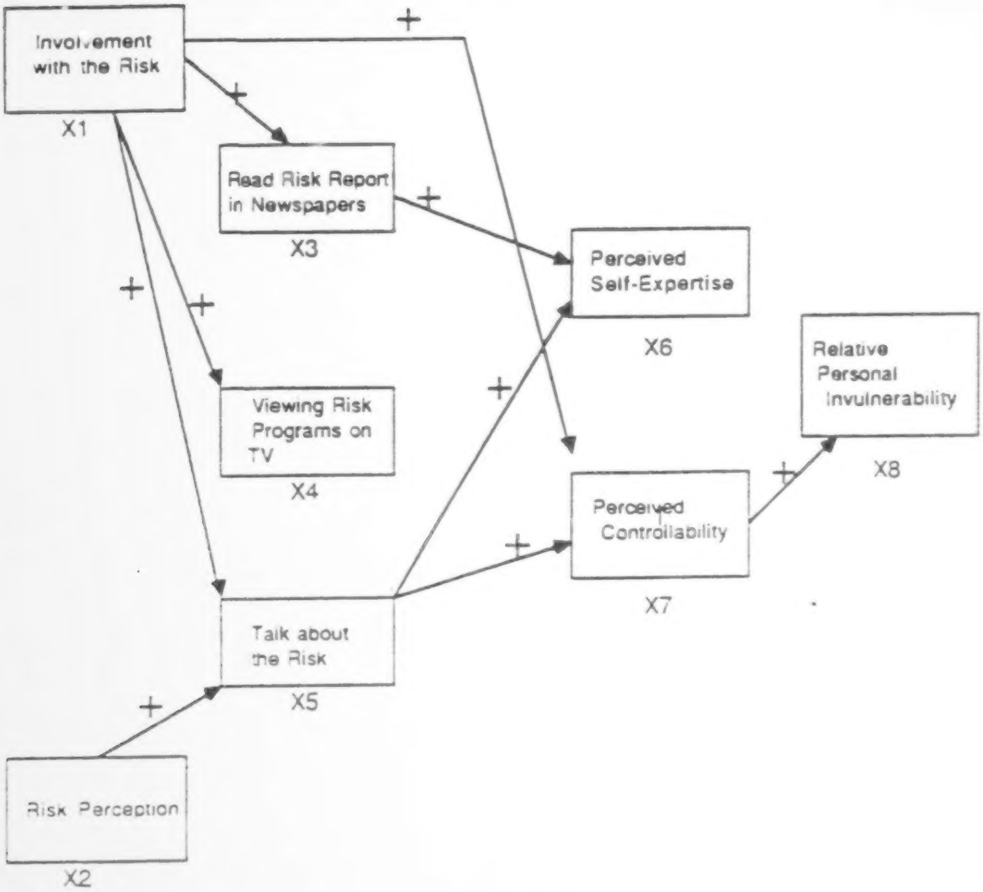


Figure 3. The Numerical Solutions to the Proposed Path Diagram

* $P < .05$

** $P < .01$

Note: All of the proposed and restricted paths are calculated and tested for statistical significance.


Involvement with the Risk
X1
Risk Perception
X2
Read Risk Report in Newspapers
X3
Viewing Risk Programs on TV
X4
Talk about the Risk
X5
Perceived Self-Expertise
X6
Perceived Controllability
X7
Relative Personal Invulnerability
X8
+
+
+
+
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+
+
+
+

Figure 4. The Revised Causal Model of Relative Personal Invulnerability

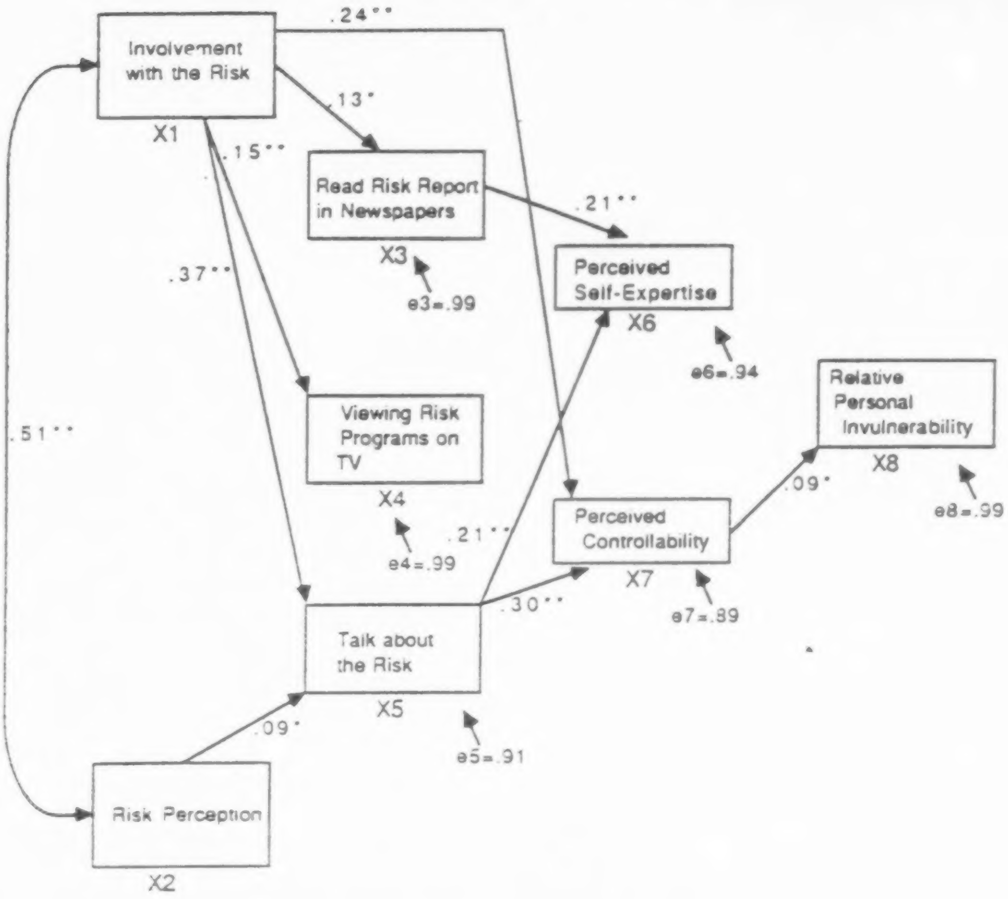

Figure 5. The Numerical Solutions To the Revised Path Diagram

* P< .05

** P< .01